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Agricultural.

PUBLIC LANDS FOR EDUCATIONAL PURPOSES.

MR. MORRELL'S Bill, appropriating 700,000 acres of land to New-York State, and a proportional amount to each of the other States, if we are rightly informed, has already passed the Senate, and is now awaiting the action of the House and the Executive.

Have our national legislators the constitutional power thus to distribute the public lands? On this point, we have never had a doubt. If others have, the action of the United States Senate should go far towards removing it. The public lands are the property of all the States; are held in trust by Congress in behalf of all; and are to be disposed of for the benefit of all.

As the United States Senate has found no obstacle in the way of distributing a portion of them equally among all the States for the advancement of Agricultural Education, we conclude there is none, and that it is perfectly competent for the General Government to give, and the State governments to receive these lands for such a purpose.

All will admit that the object is a noble one, that agriculture is not only the great interest of our country, but is that by which all legitimate industries flourish, and that it needs at this time just what Mr. Morrell's bill proposes to give it—means in every State of the Union for the education of the young farmer, *practically, scientifically*, and without other expense to the recipient than the devotion of his time to the acquirement of useful knowledge.

If it be conceded that Congress is constitutionally empowered to dispose of a portion of the public lands for educational purposes, the next question is, would the State governments duly care for and wisely appropriate the avails of these lands to the specified object? Would all the money arising from the land sales find its way to the Agricultural College? Would it there go to instruct, feed, and otherwise provide for the young aspirants to excellence in the noble profession of Agriculture? Would it all be faithfully applied to afford those young men the best facilities, and to relieve them of other expenses, while they are doing for themselves as much as they can afford, in giving up their time to a preparation for better cultivating the soil, and so advancing our great national interest?

No, not all. Some of the land would

be fooled away, and nobody would know exactly where the avails had lodged. Some of the money would stick to the troughs, instead of flowing into the central reservoir. Politicians would swallow large juncks, and you could not get it out of their maws; all the ippicac you could give would not compel them to disgorge. There would be sad doings with the land and the money. Some of it would go to erect piles of buildings, that would not be worth a tithe of the cost when done. Some would pay very unworthy professors for doing nothing. Scamps would in some cases get the control, instead of honest men. Officers would be created, not for the purpose of doing good, but to get the money; and education would be made more expensive to the young man, than if there were no funds in the State chest.

All this, and more like it, may be said by barkers from the wrong bush; and it is all true. Great abuses and great mistakes would grow out of such a gift as Mr. Morrell's bill proposes. But what then? Will no corruption get a finger in the pie if the lands go into other channels? Vide the late lawmakers of Wisconsin, whose services the honest people of that good State have concluded to dispense with hereafter. See innumerable cases, where the public lands have made nabobs, instead of benefiting the nation. Georgia, we "reckon," could tell us of some peculations by her own land agents. Massachusetts, we "guess," could. What State could not? If all, whose land operations richly deserve such a sentence, were cast into a dungeon, we should miss from the light of day many a broad, sleek face.

But we do not believe that the possibility, nor the probability, nor even the certainty of rascalities and blunders and misappropriations growing out of the distribution proposed by Mr. Morrell's bill, affords the least objection to it. Land is best taken care of when a single individual owns and cultivates it. It then contributes most to the public weal. But far is the day when all our national domain will be so appropriated; and, in the mean time, the more it is divided, and the smaller the number of its owners, the better. There is not a State in the Union but what is smaller than the whole, and will exercise a more vigilant watch over its portion than can possibly be done by the General Government over the whole. Every State will feel a peculiar obligation to look after lands appropriated to the education of its own sons, and the advancement of its own agriculture. It seems to us therefore that the pending bill, having already received the sanction of the Senate, should be put through the House with all reasonable speed, and be ready for the Executive approval, notwithstanding the probability of frauds and mistakes, because, although still liable to frauds and peculations, it will be less so than before, and will have made one step towards that individual ownership and cultivation which is certainly its desired destiny.

Another question—for we always wish to look before we leap—if Mr. Morrell's bill becomes a law, will the young men, who avail themselves of its benefits, come from the farm, and return to it, and spend their lives in its better cultivation? Or will not some of them become mechanics, some teachers, and others plunge into the various professions, so that the education drawn from the public land will benefit other classes as well as the farmer? Perhaps so; and if so, then so much the better. Instead of an objection, this would seem to us a crowning argument in favor of the bill. We believe that the proposed distribution will benefit the mechanical interests of the country just about as much as the agricultural. But what then? Should not the beneficence of the General Government be like the sun, that shines on all? The joint labors of the farmer and the mechanic supply our wants, furnish

our luxuries, and create our wealth. They are each other's customers. They must thrive together, or not thrive at all. The mechanic makes the farmer's implements, consumes his surplus produce, creates a market at his door, and insures him remunerative prices.

The farmer therefore need not envy the mechanic. We are not afraid to guarantee that the farmers of this country will not, but will rejoice the more if the endowment proposed by Mr. Morrell shall operate as benignly on all other interests as on theirs. The object is to educate those who are to be the working men of the country, to elevate them, to enlarge their power over nature, and to give them a juster influence among their fellow-men, than the workers in the soil or at the bench have yet enjoyed.

The farmer needs to know something of engineering. He should possess what may be called a sound mechanical judgment. How often do we see implements in the market, about which we are constrained to say, if the farmer could judge well of mechanical work, and of the strength of the materials, he would be in little danger of being cheated with such. A mechanical genius, somewhat cultivated, is of great value to a farmer. On the other hand, there are few mechanics, who would not be benefited by some knowledge of farming and gardening. A course of studies might be devised, as useful for the one as for the other, and no less useful to either, than if the other had no part or lot in it; and who will not say the wider the benefit conferred, the juster the measure?

There is another question still;—If young men in their teens and their twenties should spend some years at college, would they not "get above work?" If they should develop talents fitting them for eminent usefulness in some one of the learned professions, that surely would be nothing to be lamented, for we shall always want men for the high places of the nation, and the more of them come from an early farm training the better. For making truly good and great men, there is nothing like working in early life on the farm. But it may be said, that all the youngsters will fancy that they have the elements of greatness in them, and so will be unwilling to come back to farm life.

Well, this is an aspect of the subject which deserves close consideration. We admit that if you send a son a few years to the Academy, where the studies are mostly preparatory to college, where others than those preparing for college are pretty much neglected, where all the talk is of college life, of graduation, of shining in the pulpit, at the bar, or on the bench, you may lose him from the farm, especially if he had worked pretty hard, at an age when the muscles were not sufficiently consolidated to make work easy, and when he had not learned to feel that interest in farm work which every man feels in his own business. He may have stuffed himself very full of the idea that labor is hard, and that he has wit enough to live without it. At such an institution, and with such associations, we could not recommend a two or three years' course as very well adapted to return the young man a better farmer, and more contented with that employment.

Nor can we think well of a collegiate education, in the ordinary acceptation of the term, as a preparatory step to farming. We have often heard the wish expressed, that every young man, whatever he is to do afterwards, might first be put through college, the farmer's son, who is himself be a farmer, as well as any others. But we never could join in that wish. Three years in the academy, after arriving say at sixteen, and then four in college, as these institutions are generally conducted, would seem to us a very ill-adapted preparation for farm life, to say nothing of the expense, being out of all proportion with ordinary farm profits. There is more science taught in

our colleges than is learned. If we were to judge by the acquirements of those who leave them with an A. B. suffixed to their names, we should doubt whether they are very scientific institutions. Indeed they hardly claim to be. Literature, not science, is their hobby; and if we take into account the reading of the students, as well as the instruction they receive, it must be conceded that it is a literature of not the most substantial kind, and certainly not well adapted to train to hardy enterprise. If the young man who gets through it finds himself somewhat enervated and *physically* lazy, he need not wonder.

A very different course will undoubtedly be inaugurated in the colleges contemplated in Mr. Morrell's bill. The course for young men will be a working course. It will be hard, bony science, not a little Latin prose in the morning, a page of Greek poetry at noon, some mathematics before supper, and the latest novels all the rest of the day, that the young men will have to grapple with. They will work hard on the *sciences*—those that come into use in all the activities of life, but nowhere so often as on the farm. This done, to the extent desirable in one day—for the mind cannot work without rest any more than the body—they will work in the field, and so the day will be filled up with useful employment, and at a proper hour they will be willing to go to bed and sleep, instead of reading a love story all night, and being fined for not appearing in time next morning.

No doubt you might put young men in a course, that would tend to make them dreamy, sentimental, sickly, and lazy, and no doubt too many of our old colleges are managed in just about that way. That is one reason why we have so many sadly feeble men in the so-called learned professions — ministers that preach *weakly* sermons; lawyers that can't, or *won't*, defend the right, and doctors that kill about as often as they cure. But it is just as easy to institute a course adapted to make hardy, strong men, educated to conquer, as well on the farm as anywhere else, men vigorous in body as well as in mind, who will not cower before difficulties or shrink from labor.

With the expectation that colleges of such tendency will be established—colleges adapted to promote industry in both study and labor, and to make efficient as well as scientific men—we most earnestly hope that Mr. Morrell's bill will find favor with the House of Representatives, and with the President, and become a law early in the coming session of Congress. Our reasons, as we have thus far dwelt mostly on queries and objections, we will now give more in order.

1. *Knowledge, deeply penetrating and widely disseminated, is what our country now wants in connection with her untold resources, to produce the most astonishing results in agriculture the world has ever seen—greater even than it has dreamed of.* The little that has been done by our general government, through an underground corner of the Patent Office, in the way of printing and circulating reports, distributing seeds, and introducing new varieties of plants, has not been lost. Supposing that the person in charge is only human, and therefore may have erred on some points, that not every dollar expended has been expended wisely, that some dollars, some thousands, if you please, have escaped to no valuable purpose, what then? Is it not so with all public expenditures? There is a half-built floating battery in the neighborhood of New-York, which must have cost the people of this Union a million or more, and when it benefits anybody except those who get the money let us know. We saw the other day at Norfolk an unfinished ship, of huge dimensions, which has certainly cost the nation more than the general government has given to agriculture in

any ten years of its existence, and yet never to be completed, never to feel the water, never to make one cent return to the nation for the outlay. We saw there an army of men at work, who did not work, but were only killing time at high wages. We saw unmistakable signs of wastefulness, that would shock any man, who cares a fig what becomes of the public money. Not many years ago we saw a small army of men—and not very small either—husbanding the job of clearing snow from about the public buildings at Washington. They made it last a full week; and as long as it lasted, we presume their pay held out. But shall not our commerce be defended, and our public buildings be kept accessible? We venture to say that in no department of our government has there been so small a proportion of the money wasted as in that designed to foster agriculture; and although there may have been mistakes in this department, we have not the least doubt that the money expended through the Patent Office in behalf of agriculture, has returned into the bosom of the nation ten dollars for one. People are apt to forget that the wealth of a nation is but the aggregate wealth of its citizens. That many of our citizens are to-day richer from what they have received and what they have learned through that bureau, we cannot doubt. Some, from sowing unreliable seed through the Patent Office, or other causes, may be the poorer, we admit; but the balance of good done is many fold over and above the cost and the losses sustained.

So, our State benefactions, our United States Agricultural Society, our State societies, our county and town societies and our farmers clubs, may have committed errors and misspent money, but they have elicited thought, diffused information, and awakened noble ambitions; and the benefits are to-day felt, in the improvements on thousands of farms and in every shop where agricultural implements are manufactured. Our agricultural journals are certainly not perfect; but they have contributed immensely to a better cultivation of the soil, and thus returned more dollars than one for every dollar that has been been paid for them. The whole array of instrumentalities for advancing agriculture have been attended with good, and perhaps with bad results, the good vastly preponderating. Who would go back to the general torpor of thirty years ago on this most important of all material interests? Not one, do we believe.

But these instrumentalities have gone about as far as they can without another superadded. More knowledge is wanted. The subject of agriculture is a vast one. For six thousand years the world has been learning something of it, but has learned but little yet. The reason is obvious. More time has been spent in learning how to kill our own species than in learning how best to feed and clothe them. Our colleges have taught ten times more of stale literature, Greek, Latin, French, and bad English, than of solid, useful science; more of what *was*, among the dead nations, than of what *is to be*, in our living nation; more of what is *well enough* to know, than of what is *necessary* to know. They are wedded to their idols, and may as well be let alone. But the people must have schools—better call them schools than colleges—where they can learn what they *need* to know, where original investigations can be made; and whence the knowledge gained can be disseminated widely over the land.

How to make the soil produce with such ease and in such abundance as to leave the farmer time to cultivate his mind, to know as much as anybody else, and to exert his full share of influence in the national counsels, is more important to the candidate for farm life, than to know what Plato thought or what Aristotle said. We want more agricul-

tural knowledge; we want it of the right kind; we want it to be in the right place —in the heads of the men, who work the farm—and we want the best schools to put it there—schools where the young man can go and finish such an education as he needs, and not be stuffed with what will be as useless to him as a pure latinity to a "Dead Rabbit." The science of things, of practical realities, is what the farmer wants. This he can acquire. With hard work and thickened hands he might find it difficult to be a dandy scholar. But of all the sciences, which pertain to his business—and they are many and every one of them ennobling to the whole man—he can know more in a few years, if he has the right start, than any living man yet knows. Fol de rol of the old notion that farmers can't know much. They can; they must; and they will. And mother earth will assume such beauty and fruitfulness as few yet suspect. Farming will then be honored; the farmer will have his full share of influence; and the smart boys will no longer tease to be selling ribbons or peddling essence for a dubious living.

2. *The profits of farming*, though such as to make it as good as other branches of business, and for certainty and permanency perhaps better than any other, *are not at present adequate to enabling the great body of the farmers to give their sons, designed for the farm, as protracted and thorough an education as is desirable* either for their own good, or that of their country. We have heard that the "common school is the farmer's college." Well it is a pretty good college, of more value than all the higher institutions, if we could not have both. But there is no reason in the world, why the young farmer should not pursue the natural sciences farther than they are taught in these schools. Besides, these schools have not the facilities for putting a young man forward so as to make the most of his time, such as apparatus, libraries, collections and lectures by the masters of each science. The teachers are for the most part deficient in the very branches the young man wishes to acquire. About all they could do for him, amid so many younger pupils, would be, to put a book into his hands and tell him to go alone, whereas he wants a competent teacher in each science to lead the way, and to say *come*, instead of *go*. Help would thereby be afforded, as he needs; time would be economized; and he would be cheered on in the course by associates of like aspirations with himself, conquering like difficulties, and encouraged by similar hopes.

The man of fortune can afford to pay three, four or five thousand dollars to get his son through college, for the sake of the position he hopes — too often without just grouud—it will give him. Aspiring young men, who aim at a well paid profession, often incur debt in their collegiate course hoping to pay off easily from a fat salary. The candidate for the farm seldom has either of these advantages. His father's family may be very well to do, but then their capital is invested in land and in its cultivation, and although he has as good prospects from the farm for paying off old debts, as the young man who enters a professional life, yet he is not apt to view it in this light. Farmers and farmers' sons are proverbially cautious of running in debt. If they are sometimes so to a fault, it is certainly "a fault that leans to virtue's side."

So long as there are no suitable schools for the young farmer to acquire the knowledge required for his business, it may be set down that there will be no great improvement in the education, and of course not in the life knowledge of this class. And even if the best schools existed in every State, it is no unsolved problem, that generally farmers could not, or would not send their sons, at an expense similar to those of most of

our colleges. And further it should be taken into the accounts, that not all the future farmers are farmers' sons. Many a poor clergyman—heaven knows there are enough such—would be glad to send his son to a farm school, but could not pay a great price. It would be so, in other walks of life. Many a poor boy would work his way through, and become a blessing to the country, if the terms were favorable. These considerations seem to afford a special reason for so endowing agricultural schools, that the recipient of their instruction, by laboring a part of each day could work his way at a little or no other expense than that of his time. To what better use could a portion of the public lands be put.

3. It being a settled point, as we think, that more of that knowledge peculiar to the wants of the farmer is essential to the best condition of agriculture and to the attainment of the high position, which the best good of a country requires that the agriculturist should hold; and the fact being too plain to require argument, that no sufficient facilities are yet afforded to the young farmer, *there seems to be a peculiar fitness in devoting a portion of the national domain to the purpose of promoting agricultural education.* Whose are these lands? The people's. They belong to all the States, proportionably with the population. Why not give a portion to all the States? Nothing can be more fitting than that the land should contribute to give position and usefulness to those destined in coming years to cultivate it. *Peasants*, as in France and Austria, to be looked after by government about as much as the forests and mines, a sort of public property, in the shape of live stock, to be kept at work, and not quite starved, might bring enough out of the soil to feed and clothe the nation. But this is not the American idea of farming. We wish the lands to feed and clothe us, and not merely to keep the worker on them above ground, as a sort of necessary government property, but to keep him a long way above. We may seem to speak strongly; but look at it; what are the peasants of continental Europe good for, but to feed their betters, and to propagate a race to do it perpetually? Let not the farmers of this country speak of themselves, and let none speak of them, as a class doomed by their employment to obscurity and ignorance. The idea is hostile to the genious of our institutions; and yet it is covertly broached everywhere. You cannot go to a cattle fair without hearing it from their own lips. Kindly, but earnestly we blame them; and we say, heads "up;" be as good as anybody; educate your sons as well; scout the idea that the farmers of this country are ever to be ignorant and down trodden; treat it as Martin Luther did the Devil, when he threw the ink bottle at his head to make him blacker, if possible, than ever.

That farmers will be down trodden, if they are ignorant, is as certain as destiny. Intelligence will always triumph over ignorance. The same is true of all employments. The class that is ignorant will be unenterprising, trodden upon, at the bottom of the heap. The law is inevitable. American farmers must not consent to that condition of the mind, which inexorably dooms to inferiority. They must say *will*, not won't, *can*, not can't, to the idea of acquiring knowledge for themselves, and above all of securing it for their children. They are not, and, if free institutions last, are not to be, the *property* of the government, but a *great part* of the government itself—magna pars imperii et insere—because a majority. Let them use their power, generously, but firmly, persistently, and not take no for an answer. Let them *demand* that the Morrell bill be waked up, and not sleep longer among the archives. If there is one question we would ask our candidate for

Congress, it is, will you call up and pass that bill? and if he said no, we would do our part towards leaving him at home. Farmers, it will pass, when you send men to pass it; and it cannot fail to be salutary to your interest, to the interests of the whole country, and to posterity; and it is certainly as much to be desired by you as by any others, that the future tillers of our wide domain should be *men*, not peasants; governed indeed, but *governing;* intelligent, *virtuous*, and, of course, HONORED.

We have not given statistics, nor defined particular branches of study, nor dwelt on some of the most important resources for the adoption of Mr. Morrell's bill, for the reason, that we shall give place in another part of this number, to a large portion of the address of Hon. Jos. R. Williams, President of the Michigan State Agricultural College, at the late Fair of the N. Y. State Agricultural Society at Syracuse, in which the whole subject is handled by one amply competent to do it justice.

SUGGESTIONS FOR THE SEASON.

DECEMBER will relieve the farmer from most of the out-door labors, but will still leave him a plenty of important duties to be met.

Preparations for winter, yet unattended to, demand immediate attention now. See that the house is banked properly, if not built, as it ought to be, in such a way as to require no banking. The earth should not come in contact with the siding, as it hastens decay, and gives a bad appearance. Let the windows be tight, and the doors in order, and listed if necessary. Look to the wood-pile, which, if you did the best thing last winter, is large enough to last till spring. One cord of dry wood is about as good as two of green. Seize the opportunity of early snows to haul wood enough to last till May, 1860, and let it be prepared for the fire before spring labors call you abroad.

See to the horses and other stock, that all are kept comfortable, and fed as they require. It is wretched policy to let stock lose flesh in the beginning of winter—worse than at any other season—though they ought to be kept gaining always, and no more should be kept than can be made to gain in value at all times. The low price of cattle at this time may induce some to undertake the the wintering of more than can be kept growing. If so, you will do well to meet the difficulty rather by preventing all waste, than by short feed at this season. At least, let no corn-stalks, straw, coarse hay, etc., be wasted till you see how you are coming out. Calculate for a hard winter, and you will be more likely to have an easy one. Should the winter be long and severe, you may value very highly before spring the coarse fodder, which you now think little of. If cut short, moistened with warm water, and sprinkled with meal or shorts, it will go down well. A little of first-rate feed should be given every day in connection with that which is inferior. An animal, kept in good condition by a few lbs. of early cut hay, or a little corn meal, will consume a great deal of coarser and less nutritious food, and still thrive. To give all the fine, nutritious food at one time, and all the coarse and innutritious at another, is the worst policy. The animals should have something good to keep them "in heart" all the time. The stables should be kept clean; feeding should be regular; and the horses and milch cows, if no others, should be bedded. If possible, let there be water in the yard, that the cattle may be kept from wasting their manure, and chilling themselves, by drinking too much at once in a cold place. Place salt in a convenient place, where it will be at the option of the animals at all times. They know when they need it, and how much.

See that your school-house is comfortable. Let your children be early at

school. If it can be avoided, do not recall them till the afternoon school is out. The teacher is a sort of public man, the employee of a great many, one with whom everybody may find fault; but remember, that if he is faithful, it is your duty to sustain him against all unreasonable captiousness, and to throw your influence in favor of a well-regulated, well-governed and efficient school. The district school system is almost a peculiarity with us Americans, and it is the glory and the promise of our country. We want agricultural schools for the sons of farmers, after they have graduated at the common schools, but not before. The common school is, and must be, the college for the great majority of the future men and women of this country, and a pretty good college it is, if the parents first employ a good teacher, and then do their own duty towards him and their children. Do nothing to injure the usefulness of your school, then do all you can to promote its usefulness; and it will be a happy place for your children, one that they will remember, and thank you for to the latest day of life.

And finally, endeavor to improve yourself. Gather up information in winter, as you gather your crops in summer and autumn. Learn more about farming this winter, than you have in any former winter, and lay your plans to practice your art a little better next summer than in any previous summer. So shall there be progress; and, depend upon it, your profession will be honored, just about in proportion as you improve yourselves for the successful discharge of all the duties of the farmer, the man, and the citizen of this free, *enlightened*, CHRISTIAN country.

We have now spoken to you the last time for this year. Should you choose us for your agricultural editor another year, and should it be in our power to serve you in that relation, we shall try to do in our line, as we have exhorted you to do in yours—a little better than ever before.

TO PROMOTE THE HEALTH OF CATTLE.

MIX, occasionally, one part of salt with four, five or six parts of wood ashes, and give the mixture to different kinds of stock, summer and winter. It promotes their appetites and tends to keep them in a healthy condition. It is said to be good against bots in horses, murrain in cattle, and rot in sheep.

Horse-raddish root is valuable for cattle. It creates an appetite, and is good for various diseases. Some give it to any animal that it is unwell. It is good for oxen troubled with the heat. If animals will not eat it voluntarily, cut it up fine and mix it with potatoes or meal.

Feed all animals regularly. They not only look for their food at the usual time, but the stomach indicates the want at the stated period. Therefore feed morning, noon, and evening, as near the same time as possible.

Guard against the wide and injurious extremes of satiating with excess and starving with want. Food should be of a suitable quality, and proportioned to the growth and fattening of animals, to their production in young, and milk, and to their labor or exercise. Animals that work need more food, and that which is far more nutritious, than those that are idle.

In a dry time see that the animals have a good supply of water. When the fountains are low, they drink the drainings of fountains, streams and passages of water, which are unwholesome.

If barns and stables are very tight and warm, ventilate in mild weather, even in winter.—*Exchange.*

We have copied the above for what it is worth, believing that while some of the hints are well enough, others need correction. See next article.

ASHES AND HORSE-RADISH FOR BOVINE STOMACHS?

DOUBTFUL. Common sense, enlightened by liberal reading and frequent intercourse with others (it is not so plenty as not to be worth cultivating), is a pretty sure guide to the decision of many questions in agriculture.

We often see it recommended to mix four or five parts of ashes to one of salt for horned cattle. If a farmer, we should appeal to our own common sense, and perhaps to that of our neighbors, and possibly to that of our agricultural journals, before adopting, and carrying into practice the foregoing recommendation.

Ashes consist of lime, potash, soda, magnesia, alumina, and salt, mostly. But all those exist in the food of cattle. They are constantly consumed by cattle as food. Whether the last, common salt, exists in hay and grain, in sufficient quantities, relatively with the other ingredients, depends upon the situation. It often happens that, on or near the sea, cattle will not eat salt—a clear indication that there is enough of this substance in their food; while, in places far removed from the sea, they crave it—showing thereby a deficiency in the hay and grain of such regions.

Now the true way is to keep salt always within their reach, as their wants vary in different regions, depending mainly upon proximity to salt water, and as they are the best and the only judges how much they require. Cattle in most regions suffer severely if salt be not given. After being long deprived of it, they will take too much if it be given in large quantities, but never, if it is always within their reach. We lay it down therefore as an axiom, that salt is not to be given, when the keeper happens to think of it, and withheld, when he forgets it, but to be always at the option of the cattle, there being not a particle of danger, that, in this case, they will take too little or too much.

But what shall we say of ashes for cattle? It is possible that if deprived of salt, they might swallow ashes with some advantage, by reason of the salt contained in them; and it may be that other ingredients of the ashes might be a sort of substitute for salt. We should very much doubt it however; and if salt were mixed with four or five times its bulk of ashes, we should fear that, for the sake of the salt, the cattle would swallow an amount of ashes altogether injurious. If therefore salt and ashes are to be put before cattle, let them by all means be in separate troughs, that the animals may choose for themselves; for it may be fairly presumed that, if the nature or the temporary condition of cattle require ashes, they will have an appetite for them; and on the other hand, that if there is no desire for them, there would be no benefit, but rather injury from their introduction into the stomach. Our opinion would be in favor of putting the ashes on the land. The red and white clover that would grow from them, would most assuredly be wholesome for cattle, but whether the ashes would, is quite another thing; and we would let the poor animals judge for themselves, by keeping the ashes and salt apart.

As to Horse-Radish root, it tends to paralysis in the human system. Many a man has found himself benumbed by using it too freely. It might be very good for cattle, but we should prefer that a veterinary surgeon should decide when, as it must be regarded rather as a medicine than a food.—ED.

CAUSE AND CURE OF THE POTATO ROT.

MR. EDITOR:—In your Magazine for August, was an article on the blight of the potato. Since then my attention has been called to the subject, by Mr. Reed of Baltimore, who professes after much investigation, to have discovered the true cause to be, *extremely minute insects*, that gather in and about the potato, poison it, and thus produce decay.

These insects are not discoverable, by ordinary vision, except by the aid of glasses, of high magnifying power. Another gentleman by the name of Henderson of Buffalo, professes to have found the true cause, to be an insect somewhat larger, that is found on and about the vines, in the month of August. Both of these gentlemen are very sanguine in their discoveries—but both cannot be correct. I have not seen any sufficient reasons to convince me, that the affection of the potato, commonly called *potato rot*, is caused by insects of any kind. I have rather supposed the affection to proceed from a peculiar state of the atmosphere, perhaps an *electrical phenomenon*. Mr. Reed's views are put forth with so much confidence, and have so many converts, that I should be pleased if you would look into the subject, and advise us what to believe.

Yours truly, J. W. Proctor.

Nov. 6, 1858.

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Among so many theories and prescriptions it is hard to tell what to think of the disease, and what medicine to administer to the patient.

We have long thought that if potatoes are planted on sweet upland, but moderately rich and without much manure, warm turf land being best, a crop of from 100 to 150 bushels the acre, with so little expense as to leave a reasonable margin for profit, may be obtained without much danger from the disease.

If the land is low and not of the sweetest kind, a handful in the hill, of one part of salt, two of plaster, four of lime and ten of wood ashes, greatly diminishes the danger of disease; and this (ascribing the benefit very largely to the ashes) we believe to be an excellent dressing for potatoes, be the land what it may.

Of Mr. Reed's and Henderson's theories, we shall be glad to learn all that is known. But whatever of truth or error they may contain, it is at present safe to feed the potato crop with food convenient for it, to avoid nitrogenous manures, to plant early, and to be content with moderate crops, instead of enriching the land very highly, with a view to a great yield, especially not to apply green barn manure.—Ed.

SCOTTISH BREEDS OF CATTLE.

The Mark Lane *Express*, speaking of the late show of the Highland Agricultural Society, at Aberdeen, says that at the dinner, Mr. Torr, in some remarks, said—"Whatever you do, don't neglect the native breeds of Scotland. Depend upon it, the country does not possess more valuable animals than these native breeds." The *Express* adds—"We fancy he was speaking here to the merit of the polled beasts, but the Highlanders are, in their way, and for their purpose, as worthy of proper cultivation." We second these observations, being satisfied from what we saw of these breeds in Scotland, that they are very valuable, and we hope to see some fair trial yet made of them in America. At Oban, a city, as they choose to call it, containing about 8,000 people, situated in the Western Highlands, we saw a dairy of some fifty cows, two or three Ayrshires, and the rest of the small, black cattle of the country. The dairyman told us that his Ayrshires would give the most milk, but the black cow better in quality, and of more value in proportion to the food consumed. From what we saw and heard from others, we presume he was correct, and that the black cattle are the best for that country. Their meat is worth a penny a pound in the London market above that of the Durhams.

BASES FOR PORTABLE MANURES.

BY DR. LOUIS HARPER, LL.D.

Human society is everywhere increasing at an enormous rate, but nowhere more than here in the northern part of America. It is here, undoubtedly, that,

in a comparatively short time, the center of civilization will be found.

If that happiness and prosperity which we now enjoy shall continue, the productiveness of our soil must keep pace with the increase of the population. Upon the agriculturist it depends, then, to perpetuate that prosperity. He must, consequently, cease to carry on an exhausting agriculture, and exchange it for a fertilizing one, of which a beginning has already been made here in the Eastern States of our Union. Such an agriculture can only be carried on if the land receives more than it yields. With our ordinary means, this is nearly impossible, for many of our crops yield no return to our lands, as, for instance, the tobacco—a plant which exhausts the land very much, because the whole of it is carried off from the land, and nothing of it is ever returned—a vegetable which is, indeed, a nuisance to the human race; a much greater impediment to the continuance of our welfare and the progress of our civilization than we imagine, and much more injurious to the Caucasian than the opium to the Mongul. Other crops yield only a partial return to the lands. The deficiency must be supplied. In later years the agriculturists have resorted to the guanos.

It cannot be denied that the guanos, especially the Peruvian and Californian, are excellent fertilizers, but they are not suitable either for all crops or for all soils; and they have more the tendency of improving the growth of the plant itself, than the quality and quantity of the seeds and grains; their effect lasts, besides, only for one year, and during that time they are such stimulants as to produce a relaxation and sterility of the lands for the following years. All the different kinds of the guanos are, moreover, very dear, and their supply is limited and will very soon be exhausted.

It is, therefore, of the greatest importance, not only for the agriculturist, but for mankind in general, to devise means for other artificial fertilizers, which can be procured in inexhaustible quantities, and are equal, if not superior in their effect, to the guanos. It is not easy to devise means for such artificial fertilizers. We all know that ammonia, the phosphates, sulphates, and the fixed alkalines, potash and soda, are the principal elements of fertility. A good fertilizer must contain either all of them, or at least most of them, in sufficient quantities; but we cannot mix these elements, or even some of them, and use them as a fertilizer; their affinity would cause them to make combinations different from what we desire, and what is compatible with the nature of the vegetation for which we employ them; or they would set each other free, and the volatile part escape in the air instead of remaining in the soil as a fertilizer; the mixture would any how be too caustic, and destroy the vegetation, instead of promoting its growth.

There must, therefore, be a basis in which the different elements of fertility are incorporated in such a form as we desire, and as is necessary for the different agricultural or horticultural plants, in order to neutralize their causticity. It is easy enough to find a basis for each of the different elements of fertility; so, for instance, for the phosphoric acid, we take lime as a basis; for sulphuric acid, either lime, ammonia, soda, or potash; but a common basis for all or most of the elements of fertility, must not be a salifiable one, that is to say, one that forms a salt with one or all of them. It must receive all of them, and maintain and preserve them in the form in which we desire them.

Such a basis must not only perform the office of receiving the different elements of fertility and maintaining them in the desired form—for if it has no other qualities it is a dead and inert body, contributing nothing to the fertility of

the land, for which the fertilizer has been employed—but the basis itself must be a fertizer, and increase the effect of the different elements of fertility with which it has been impregnated.

Nature offers, according to my opinion, only *two* different products which are sufficiently qualified for a basis of a good fertilizer. The one is the green sand found in different geological formations, but especially in the Cretaceous, and in the lower Tertiary or Eocene formations. The first, the green sand of the Upper Cretaceous formation, is found in its greatest perfection in the State of New-Jersey, and there is generally called Marl. The second, the Green Sand of the Eocene formation, is found in its greatest perfection as a fertilizer in the lower portion of the State of Mississippi, as will be found in my report on the Geology and Agriculture of that State, page 171 and the following.

Dr. Charles F. Spicker, of New-York, has succeeded in inventing the formation of a most excellent fertilizer, the basis of which is the Green Sand, or Marl, of the Upper Cretaceous formation of the State of New-Jersey. A Company, under the name of the National Fertilizing Company, has been formed for the manufacture of that fertilizer, according to a patent granted to Dr. Spicker. The manufacture of that Company is located on the Highlands of Nevesink, in Monmouth Co., N. J.

The Green Sand, or Marl, of the Upper Cretaceous formation of New-Jersey, is in itself a most excellent fertilizer. According to the analysis of the New-Jersey State Geologist, it contains, besides a large quantity of soluble silica, considerable quantities of potash and phosphate, and sulphate of lime. This Marl is therefore extensively used as a manure. It has the best effect upon all the different crops, and is sold at the different marl pits at 6 and 7 cents a bushel. It is, of course, not a concentrated manure, as the guano. It has to be used in large quantities, of from 20 to 40 wagon-loads for an acre, but such a quantity has not only the first year fully the effect of guano, but it retains its effect from five to eight years; and instead of exhausting the soil, as guano does, it improves it lastingly.

The National Fertilizing Company owns an excellent marl-quarry at the Highlands of New-Jersey. In their manufacture, this marl is impregnated by a large quantity of ammonia, by means of the decomposition of nitrogenous animal matter; and it contains from 5 to 8 per cent of ammonia. It is furthermore impregnated with phosphates, of which it contains from 8 to 10 per cent; with sulphates, of which it contains about the same quantity, and with the fixed alkalies, potash and soda, of which it contains at least from 10 to 12 per cent. That this mixture must be a most valuable fertilizer, every agriculturist and chemist will see at once. It cannot be inferior to guano, and it must exceed that famous fertilizer in its effects upon the soil. Instead of exhausting the soil, as the guano does, it imparts to it a lasting fertility, and its effect cannot be confined to the season of its application.

Experience has fully confirmed this opinion. Allow me to cite an example. The little farm which I cultivate consists of a very ready soil, containing a large quantity of pudding-stone and conglomerate of sand, cemented by hydrated per-oxide of iron, and may, in most of its parts, be called very stony. It has not been manured for about five years, and the soil, of little fertility in itself, is completely exhausted. Last spring, when I began to cultivate this farm, I had no manure, and was compelled to plant the whole crop without it.

I planted about four acres of corn; when the corn came up, it resembled grass more than corn, and nobody

thought that there would be more than nubbins on the whole field. When the corn was about a foot high, and fit for its first plowing, I manured it with the National Fertilizer, using perhaps a little more than I would have done of the best Peruvian guano—three table spoonfuls to a hill.

The effect of the fertilizer was soon visible; the corn grew vigorously, and stood the drouth, which has destroyed all the corn in this neighborhood. The stalks of the corn did not grow very large, but the ears did remarkably so. I have never in my life seen corn better eared than mine is. I have ears of corn in my field from 12 to 16 inches long, containing from 700 to 900 grains, and that corn which, three months ago, everybody thought would not yield an ear, will give me from 30 to 35 bushels of corn per acre, and I defy any farmer in New-York or New-Jersey to show me larger ears than I can produce. Guano may, on good land, produce stalk, but it will not produce such ears.

This corn-field fully confirms the opinion which you pronounced months ago about the National Fertilizer, and in order fully to convince you, I shall soon have the pleasure of showing you some of the ears of corn gathered in my field. The above example alone is sufficient to show that the fertilizer manufactured by the National Fertilizing Company can fully compete with the best of guano.

Besides the Green Sand Marl, there is another natural product which can serve as the basis of an excellent fertililizer; this is the Muck, or Peat, of the northern Peat swamps. It contains less phosphate and alkali than the Green Sand Marl, but it abounds in crenic, apocrenic, and humic acids, and in carbon, which are most excellent fertilizers; it is in itself a powerful fertilizer, as has long ago been sufficiently proved.

A fertilizer, the basis of which is this Peat or Muck, has been recently invented, and the invention secured by caveats and patents in Europe and America, and I shall soon have the pleasure of giving you more information about that matter, so very important for the agriculturist. When a manufacture of this new fertilizer has been established, and both of these fertilizers are offered to the agriculturist for little more than half the price of the Peruvian guano, the latter will, most certainly, be entirely superceded.

Riceville, Sept. 30, 1858.

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We know the Green Sand Marl to be a most excellent fertilizer. The portable manure, manufactured by the National Fertilizing Company, is the same thing, with ammonia, the phosphates, etc., condensed in it, for the purpose of making a less quantity suffice, that it may be the more easily transported.

As for the Muck business, we have an experience with it, and think we know all about it; and without disparaging its use as a basis for the concentration of ammonia, the phosphates, alkalies, etc., into a portable manure, we are free to say that it is valuable in itself when properly cured and mixed with barn manures, as we have prescribed in many of our former numbers, though by no means as valuable as the green sand marl; yet, as it is pretty generally diffused, we think that the farmer may better use it, as one of the home fertilizers, in the way we have often described, than after its being carried through other processes. If he will follow the advice we have repeatedly given, he may well be his own chemist in this matter, and then, if there is a profit in its use, it will be all his.—Ed.

THE MANUFACTURE OF SUGAR FROM SORGHUM.

We believe that much ignorance prevails on this subject, as is natural from the fact of its recent introduction. While we confess to having no experi-

ence in the matter and to not being thoroughly read up on the subject, we are yet desirous of giving our readers such information as may be useful to them. With this view we some months since cut from a paper, which we need not name, the following article, and as its recommendations, in their purely scientific aspect, struck us as rather strange, we sent it to Dr. L. Harper, whom we knew to be somewhat familiar with the process of sugar making, as well as thoroughly versed in chemistry, asking his suggestions in the matter. We have received his reply, and insert it with the article below. Many of the suggestions in the article itself are undoubtedly good, but the idea of applying such quantities of super carbonate instead of lime, or, if the alkalies are used, the simpler and cheaper carbonates, is simply absurd, as viewed in a scientific aspect, and we presume will be found so practically. The following are the article and Dr. Harper's remarks;—

"SORGHUM MANUFACTURE.

"The manufacturers of molasses from the Chinese Sugar Cane, in this vicinity, have experienced some difficulty in clarifying the juice of the cane so as to remove the acid or tart taste from the syrup. Some have used lime, and others saleratus or pearlash, and yet the molasses would have a sharp acid flavor.

"Mr. Harwood, of this town, has been experimenting, and on Monday brought into our office a sample of syrup that he had just made from which the sourness was nearly if not wholly removed. The acid being extracted or neutralized, we have no doubt the syrup can be granulated and good sugar made from it. Mr. Harwood's process was to take *super carbonate of soda*, which readily combines with the phosphoric and sulphuric acid abounding in the green vegetable extract, and causes a scum to rise rapidly, which he removed with a perforated ladle or skimmer. This process he repeated several times until the juice was perfectly clear. Two or three pounds of soda is sufficient for 150 gallons of juice. We may state the process more clearly as follows:

"Take half a pint of water and in it dissolve a teaspoonful of super carbonate of soda, (which may be obtained at any drug store,) and pour the solution into the syrup before it comes to a boiling heat. As the scum rises it must be removed. Repeat this process every 6 or 8 minutes until the juice is thoroughly clarified—perhaps for one hour or more. During the skimming a gentle fire must be kept up, but the juice must not be allowed to boil, except a little on one side of the vessel.

"After the green coloring vegetable extract is taken out in the form of scum, the juice may be boiled down to syrup, when it should be strained off and set away to cool. The *pure* juice is transparent almost as water, and the pure syrup resembles castor oil. If slightly burnt it will have an amber color. After the syrup has had time to cool and settle, it may be put on a second time, for "sugaring off," and treated in precisely the same manner as maple sugar is made—that is, clarify again with eggs or milk, or both together, and boil down to a proper consistency, if for molasses, or a little more if it is desired to granulate it and make sugar. Set it away in clean wooden vessels and if properly boiled down, without burning, crystalization will commence in a day or two. After the granulating process is over, the molasses may be drained off, leaving a sugar of superior quality."

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HIGHLANDS OF NEVESINK,
Oct 24, 1858.

ED. FARMER'S MAGAZINE: — I have read with attention the article entitled "Sorghum Manufacture" which you had the kindness to communicate to me, and I herewith return it to your address.

The author of the article recommends a large quantity of super or bi-carbonate

of soda to clarify the juice of the Chinese Sugar Cane or Sorghum, 2 or 3 pounds for 150 gallons of the juice. I am not well acquainted with the manufacture of syrup, or sugar, from sorghum; nor do I know its exact contents and can therefore only judge from the analogy of sugar cane.

It is well known that it is not advisable to use alkaline salts of potash or soda for clarifying the juice of the sugar cane, and no sugar planter does it. Such salts have the effect of thickening the juice and rendering it mucilaginous, which decreases the quantity of sugar considerably, and I am much inclined to believe that the same will take place with the juice of the sorghum. It is much safer to clarify the juice with lime, and to apply for that purpose for 100 gallons not more than from 1 to 2 ounces —not pounds.

If, as the author of the article, or rather his authority, Mr. Harwood, seems to think, the acid and tart taste of the syrup be cured by phosphoric and sulphuric acids, the lime having a strong affinity for both of those acids, stronger even than soda, must neutralize them. The above quantity of lime is all sufficient for the juice of the sugar cane. If it should not be sufficient for the juice of the sorghum, which can easily be found out by testing it with blue litmus paper, which the thousandth part of free acid will immediately color red, more can be carefully added, as the excess of the alkaline earth must be a very slight one.

Both the acidity and tart taste of the juice or syrup of the sorghum will be greatly diminished, if the stalks be ground or pressed as soon as they are taken from the field, and the juice boiled as soon as extracted from the stalks. A few hours of delay have a great influence, especially in warm weather, and produce immediately an alteration in the stalks.

If, as the author of the article recommends, 2 or 3 pounds of super carbonate of soda be added to 150 gallons of the juice extracted from sorghum, it can not but have a bad effect upon it. The large quantity of the alkali must necessarily decrease the quantity of sugar.

Why does Mr. Harwood recommend super or bi-carbonate of soda? Why not simple carbonate? He does not apply the salt for its quantity of carbonic acid, but for its quantity of soda to combine with phosphoric and sulphuric acid. Carbonate of soda contains a larger proportion of soda than bi or super carbonate; the latter contains in the same proportion of soda two proportions of carbonic acid, and is much dearer than the former.

Very respectfully yours,

L. Harper.

COMPOSTING.

The idea of incorporating the fertilizers, as ammonia, the phosphates and the alkalies with a base to retain them in a condition to be absorbed by plants, as explained in another part of this number, is an important one. It will undoubtedly be made to avail much in the preparation of city refuse, to be transferred as portable manures, to the country—a thing most desirable, if properly done and at reasonable prices, for both the city and the country.

But it is still more desirable for the farmer in his home operations. Swamp muck, is probably the best deoderizer in the world, that is so cheap, and almost everwhere so easily obtained, in any quantity desired. We call it a *deoderizer* because it absorbs from the air and from all substances coming in contact with it whatever is foul and offensive. Every farmer must have noticed that his stalls, pig pens, barn yard, necessary, sink, &c., &c., have no offensive odor, if plenty of swamp muck be applied. This not only absorbs the foul gasses, but it holds the salts of alkalies and the phosphates, when mixed with it, as in

urine, sink washings, night soil, offal and garbage of any kind.

All these substances contain the very essence of fertilization, but some portions of their fertilizing properties are liable to be washed away in the form of soluble salts, and others to evaporate in the form of ammonia, and of other gasses, which are offensive to the premises, if they escape, but are of some value to the field, if retained. No unfriendly odor can arise from the farmstead, without warning the holder that he is suffering loss—some dimunition to the value of his manure, be the escaping matter what it may, and very considerable if it be largely ammonia. Now the object of mixing swamp muck with these substances is two-fold, first, to hold the soluble salts from being washed away, and second, to prevent the formation and escape of gasses, especially ammonia.

While the city vender of manure does the composting, it is well, so far as the refuse of the city is concerned. It returns to the country and to the fields, what was taken from them. It thus keeps up the fertility and increases it, so that the older a country is, the richer the soil, if all parties manage wisely. But is the farmer aware, that so far as the garbage of the farm is concerned, he is doing the very same thing, which the manure vender would do for him, when he mixes swamp muck with the substances we have named, and doing it at a cheaper rate? He is offering a base for the retention of the fertilizing properties—something that will divide them, diffuse them through a larger mass, and retain them till the growing time of plants.

If, for instance, you were to put a quantity of swamp muck, at some out-of-sight place, near your house, say ten tons, then from time to time throw on it, or rather bury in it, the slops from the chambers, the stronger soap-suds from the wash room, the dead rabbits—we do not mean such as we have here in New-York—any offal that the swine would not dispose of to advantage, in short whatever filth about the premises is to be disposed of, the cleanings of the sink among the rest, you would have by the end of a year ten or twelve tons, and perhaps more—that would depend upon how much you add from time to time—of very good manure, quite as good as much that is offered for sale.

In the original heap of muck would be plenty of carbon together with a little ammonia and a very little alkaline and phosphatic matter. In what you add from day to day there would be a great deal of alkali, as potash and soda, also a good supply of the phosphates, and of the ammonia-making materials. Between the muck and the added substances, you would have all the wants of the soil, and all in a condition to be appropriated by plants.

Where the nature of the ground will permit, it is well to let the washings of the sink run into an excavation, first filled with muck. In this way alone, it would be easy to make twenty-five to fifty tons of manure, in a wet state, equal to at least ten to twenty tons in a tolerably dry condition, not as good, to be sure, as Peruvian Guano, but the whole worth more than one ton of the best guano ever imported, and all at a very trifling expense.

We do not discourage the purchase of manures in all cases. That the filth of the city should be made to fertilize the fields is very desirable; and if this is to be done, manures must become more and more a matter of sale and purchase. But we wonder that farmers are not more ready to husband their own resources, so easy is it, so comparatively inexpensive, to save whatever is already on the farm, and to put it in a condition to meet the wants of the crops. Our rule would be to use up the home fertilizers first, and then to buy more, if we could not get big crops without. The growing of small crops will not long be, and we

loubt whether it is now, a very profitable business.—Ed.

AGRICULTURE AND AGRICULTURAL EDUCATION.

BY HON. JOS. R. WILLIAMS.

The relative importance of Agriculture, as a human pursuit, demands little discussion. Should vegetation be suspended for six months, all animal life would perish, and our race become extinct. All industry, all prosperity, all human existence then, depend on Agricultural production. We often talk of Manufacturing countries, of Commercial countries, of Agricultural countries, but there is no large community, whose Agricultural interests do not far exceed all other interests combined. Great Britain is perhaps regarded as the most exclusively Manufacturing and Commercial Nation, that has ever existed. Yet vast and wonderful as her Manufactures are, penetrating as her Commerce does every ocean and every inlet on the face of the globe, yet just so far as she excels other nations in Commerce and Manufactures, she excels them in Agriculture also. The returns of her Income Tax show, that two-thirds of all the net income from the industry of the empire, is derived from Agriculture. In some nations, one-half, in others, nineteen-twentieths of the people, depend on the soil for subsistence. The average is probably seven-eighths. Such being the great controlling fact, the trades, pursuits, and professions, which the subdivision of industry, among civilized men, renders necessary, have been the especial objects of protection and sympathy, while Agriculture, the nursing mother of all pursuits, just begins to attract that aid and encouragement, which its relative importance demands.

SUNNY SIDE.

When we look abroad upon the magnificent spectacle these grounds present to-day, we are not surprised that your great Annual Festival has become National in its character and its attractions, for it speaks trumpet-tongued of a nation's present capacities and future grandeur. When we look at that long array of majestic cattle; at the splendid combinations of symmetry, speed and strength, which those matchless horses present; the sheep with their ponderous fleeces; the fruit so richly tinted and so luscious, that if a modern Eve should be arraigned for plucking, no gallant jury would find her guilty; the machinery and implements, ranging from the powerful Grain Reaper to the most exquisite garden utensil, the most stubborn mind must be filled with admiration and patriotic pride.

Agricultural improvement has received more impetus during a single generation than during the six generations preceding. Yet progress has been very perceptible, though very gradual, for two centuries. The England of Victoria supports seventeen millions of people in far greater plenty than the England of James II. supported five millions, and the Prussia of to-day, sustains with greater abundance her seventeen millions than the Prussia of the Great Frederic supported one quarter of that number. The improvement is felt in civilized Europe among the people, as well as manifested in efforts almost gigantic. The rescue of the vast marshes of Tuscany, to become again as in ancient times, the abodes of a busy population; the reclamation in Russia, near St Petersburgh, of a wide area of similar land; the draining of Haarlaem Lake, in Holland, by steam machinery, the most formidable of all undertakings in the cause of Agriculture, and planting an industrious people on its former bed; and in England the conversion of the fens of Lincolnshire into productive estates, the extensive irrigation and draining over the whole breadth of the Island, are cheering evidences of noble progress.

Forty years since there were no Fairs,

no Periodicals, no Discussions, few inventions of farm implements, and only at long intervals were new breeds and seeds disseminated. In our country, I think every candid man will admit the great improvement during the last thirty years. Travel along any highway and he will be struck with the improved size and health of the whole cattle of the country. The sheep have improved in quality and doubled in value. In implements used, there has been a general, though not entire revolution. Grain crops, fruits, and vegetables have improved. The change is as marked in the superior address and increased intelligence of the masses of men. Offensive exhibitions of poverty are witnessed only at longer intervals, and in fact rarely seen at all. We need not go to the Tax List nor the Census. We find convincing proofs of thrift in increased personal comfort, and increased National wealth.

SHADY SIDE.

I would gladly continue the contemplation of the fairest features of the subject. Let us view it, however, in a gloomier and far more suggestive aspect, more worthy of your serious reflections. This splendid exhibition does not tell the whole truth. It is not a type, either of the actual condition, or the actual husbandry of the whole country. It is selected. It is exceptional. It affords evidences of what glorious results can be accomplished, rather than of what has been generally attained. Thousands to-day witness for the first time the perfection and beauty to which animal and vegetable productions, and agricultural implements can be brought. A new world is open to them in culture. What proportion of the farmers of the State raise such stock, or grain, or vegetables, or use such tools, as this exhibition affords? One excels in horses, another in sheep, another in cattle, another in large crops of grain. But each production depends on the observance of the like inexorable laws. A farmer who excels in one could excel in all. But I will venture to say that there are not twenty farmers in the State who carry the same comprehensive knowledge and fidelity into all the details of their business, and bring all the products of their industry to anything like an equal perfection.

Turn with me to the Census of 1850, and you will find that the average production of wheat in the State of New-York was twelve bushels, of corn twenty-seven bushels, and of hay, one and one-eighth tons per acre. You will find sufficient evidences within these grounds of crops three or four times as large. It will be readily conceded that these crops can be and ought to be doubled. Allow for increased area under cultivation at this time, double the crop, and then deduct one-third of the increased production for increased expense of cultivation, and the loss to the State on these three crops, stinted and deficient as they are, is at least $50,000,000.

This is not all. New-York probably has 15,000,000 acres of cultivated land. All over her surface are exhausted and neglected fields. They have been cropped and over-cropped. No subsoil plow has penetrated them. They are renovated by no green crops, no rotation, no fertilizers. So much area and capital lie idle and useless. That 10,000,000 acres of land in New-York are annually damaged twenty cents per acre, would be a moderate calculation. Here is a loss of $2,000,000 annually.

Let us generalize a little. Let us apply similar calculations to the whole Union. The average production of wheat in the United States, in 1850, was less than eleven bushels; of corn, less than twenty-five and one-half bushels, and of hay, one and one-fifth tons per acre. The corn crop was valued at $296,035,552, the wheat crop at $100,485,944, the hay crop at $96,870,494. The aggregate value was $493,391,990.

Double the production, and deduct one-third of the increase for increased cost, and the profit to the whole nation would be $328,927,993.

I need not pause to call your attention to the desolated and abandoned plantations, all over the Southern States. Millions of the virgin soils of the Western States have already been injured by exhaustive cultivation. Our people seem to be betrayed into this ruinous policy, by the facilities with which new lands can be obtained to replace the exhausted. While the average size of farms is 203 acres, as it was in 1850, this wasting system may be continued. Economy in practice keeps pace, in some measure, with density of population. Accordingly, in Belgium, where the population is 336 to the square mile, and in China, where they have nearly reached the starvation point, the necessity of self-preservation has driven the people to many of the same methods that are with us the result of scientific deduction.

The worst result of a thriftless culture is not told. Too large a proportion of the farmers of the West, and the planters of the South, owe their crops in advance. They pay the crops of this year to extinguish the debts of the last. The consequence of this fatal negligence, pecuniarily, socially, personally, nationally, I have not time to pursue. I will remind you, however, that the rural population meets a terrible retribution in the tribute paid by labor to capital, the perpetual debt, which hangs like an incubus upon their energies, of country to city, and the disproportionate share of human earnings concentrated in great cities, some of which is dedicated to noble uses, but too much of it consumed in reckless extravagance, in crime and debasing indulgences.

WHAT TO BE DONE.

It cannot be denied that in times past, the most moderate talents, and little intelligence, were deemed adequate for the tillage of the earth. The farm laborers of continental Europe, live in the same cottages—often in mud cabins without furniture—and plod along in the same track as their forefathers. They cling to gross superstitions, and ancestral usages, and scorn books and instruction. In many portions they persistently draw the plow with ropes tied to the horns of oxen, and generally reap their grain with the sickle. In England, the tenure of landed property, and its accumulation in few hands, the chrushing burdens of Church and State, and the consequent poverty and ignorance, render farm laborers a completely tributary population. An American traveler in England, inquired of a group of farm laborers if they were prospering. "No!" replied one of their number, "we are haying!" This is rather a ludicrous, but striking illustration of the ignorance of English farm laborers. In our country alone is the farmer a man, socially and politically a developed man and freeman. Whether in that loftier acceptation he will stand the test, "He is a freeman whom the truth makes free," may admit of greater doubt.

The pervading sentiment among a great portion of the farmers themselves, in regard to the dignity of their calling, and the knowledge required for its pursuit, is humiliating. Farming communities are decimated of the boys of most active intellect, sent off to city or college, to follow other pursuits more respectable in the apprehension of the family. As surely as in ancient times, feats of valor and of arms, being alone the theme of song and story, and winning alike the smiles of beauty and the applause of the powerful, sifted the masses of genius, energy and courage, so in modern days the brilliancy of great fortunes, and professional renown, have attracted a large portion of its capacity and energy from the rural population. The victims are, it is true, tempted by a siren's song. Ruined health, doubtful reputation, bankruptcy, and sometimes

crime, tell the sad history of regiments of infatuated men. The aspirations of few are realized, and to them life loses its zest, before ambition is gratified.

Go into a public assembly, and if the speech is dull and stupid, ten to one the farmer who stands next to you, will declare that the speaker had better go back to the plow, or the jack-plane, thus acknowledging that inferiority of talent is sufficient for his own noble calling.

You have throughout the State, at this season, County Agricultural Fairs. The cities and villages have been ransacked for orators. You have sought them among lawyers, doctors, professors and politicians. Each pursuit should furnish its own teachers—its own prophets. If, perchance, a farmer here and there, has ventured to address his brethren, to tell stern truths, in his plain and homely way, farmers will be the first to abuse him for his temerity, and pursue him with the most uncharitable criticism.

Such are some of the evidences of the degraded estimation, too often placed upon their avocation, by the farmers themselves.

If there is any pursuit, which demands for its most successful prosecution, acute powers of observation, comprehensive intellect, and most abundant and varied knowledge, it is that of the farmer. There is scarcely a science which will not shed a flood of light along the pathway of the farmer, and a knowledge of the practical arts and trades of life, must constantly aid and relieve him. So thickly do objects of interest and study cluster around him, that if an enthusiast, he might exhaust a life-time on his own farm in pursuit of a single science.

BRANCHES OF KNOWLEDGE DESIRABLE.

The farmer deals with life. He is entrusted with the life and health of his own family. All animals upon his farm are dependent upon him. He expends his labor and skill in promotion of vegetable life. How important it is, therefore, that he possess a knowledge of Animal and Vegetable Physiology. The farmer should be himself a fully developed and healthy man. Yet living under conditions, and in an atmosphere, so much more propitious to health, than the sedentary man, or the pent up inhabitant of cities, how does it happen, that the average life of farmers, very little exceeds the average life of men in other pursuits. The reason is evident. While the life of the citizen is abridged by effeminacy, noxious air, and contagious diseases, the life of the farmer is shortened by excessive exposures, imprudences, and general defiance of the laws of health. A farmer should be familiar with the general laws by which all animals grow, thrive and decay. When his own family are in danger, he demands the skill of a physician, who has bestowed a great share of his life in obtaining the necessary knowledge of the human frame, and its mysterious functions. But every domesticated animal, belongs to the same class of animals, mammalia, as himself, endowed with a similar, and in some cases, as delicate an organization. He should know enough at least, not to expose them to vague quackery. You have perhaps half a million of horses in the State of New-York. How many are destroyed by quackery? and what loss is incurred? At least a million of dollars annually. So important does the French government consider this subject, that it supports three great Veterinary Colleges. They are resorted to by students from all France, and 240 Scholarships are distributed at the Government expense, 68 at large, and two to each of the eighty-six Departments of France.

I should not expect every farmer to be a physician, but how invaluable to him, often living in an isolated position, would be a mastery of the general principles on which the preservation of health depends. I need not say how

many thousand victims could be rescued from gross superstition, or the vilest quackery.

The farmer's principal vocation is to deal with vegetable life. The assumption is, that he knows all about it, when in fact he knows very little. The laws by which a single stalk of corn is sustained and grows, is as inscrutable as those by which Uranus is whirled in its vast orbit; yes, more, because the elements, the rapidity, the course of the planet's motion are comprehended, while the laws of the growth of the tiniest plant are not. We plow, drain, and pulverize the soil, and plant the seed, and nurse it. It grapples its hundred rootlets widely in the soil, and throws out its branches to gather food from the air, the rains, and the dews. It thrives vigorously, and pushes out stronger roots, the atmosphere and the soil reciprocating the aids which each affords the other. The farmer cultivates the plant, and destroys all rival vegetation likely to exhaust or choke it. But his appliances are mechanical. His knowledge is arrested on the very threshold we desire to cross. The mysterious agencies by which the plant is invigorated, and by which it converts into grain, fruit, and vegetables, its invisible and intangible food, are beyond his control. An endless field for scientific research is here opened.

Botany will constantly illustrate the pursuit of the farmer. I need only call your attention to the subject of hybridization of plants, by which new varieties are multiplied. The display of flowers, so multiform and gorgeous, and those lengthened benches, groaning under huge piles of vegetables brought to such perfection, attest how much our gardens, parlors, and tables, owe to science in this department. Here is an instance, where research, purely scientific, has often doubled the value of the earnings of the farmer or gardener. What do croakers against Books and Science do with such a fact?

Horticulture can hardly be pursued without a knowledge of this subject. Farmers in general treat the subject of Horticulture with too much contempt. Nothing throws around the homestead so many attractions as the orchard and garden. Even to the common subject of grafting and budding, a great majority of farmers have paid little attention. The pomologists here will tell you that they have been frequently asked to-day for specimens of cultivated fruit, for propagation of the same kind, from the pit or seed. This seems incredible, but so it is. Practical men have laughed over the story of the college educated gentleman who lost a shoe of his horse and carried a skillet handle to the blacksmith to repair it with. Yet he exhibited no greater ignorance than the man who would attempt to raise cultivated fruit from the seed or pit.

Chemistry perhaps, of all the sciences, is that which will aid the farmer most. Its analyses will show the constituent parts of animal and vegetable matter. It will eliminate from the fibrous, and nutritive portions. It will prove which are the most profitable, and in many cases, which are the most healthy productions. It will compare different grains, and tell you the relative portions of gluten, starch, oil, sugar, albumen, water, potash, lime, &c., contained by each. It will disclose which grain possesses most of the elements conducive to vital heat to the animal, which contains the most fattening material, and which will build up fastest the muscular system.

Chemistry will also show the imperative necessity of saving everything of an animal or vegetable nature, and indicate the most economical and sure methods of preservation. The sterilization of land is owing to the fact, that organic matter is sold in the crop, burned, evaporated, or whirled away in the running stream. I doubt not there are daily thrown into the streets of this city, or

nto the canal, such quantities of organic matter, in process of decomposition, as would fertilize thousands or tens of thousands of acres of land. Chemistry will teach you how it can be composted and preserved, and its volatile and offensive elements arrested, deodorized, and packed away for future uses. Within the State of New-York, untold amounts of wealth are annually wasted for want of a little knowledge of Chemistry. Almost every locality contains vegetable deposits, or lime, or marl, or some renovating element. The barnyard manure, liquid and solid, the offal of the house, vegetable or animal, composted with muck or peat, the volatile elements held captive by cheap substances for which they have affinity, and the mass preserved till it is thoroughly decayed and assimulated, would preserve any farm in a state of productiveness, that would be otherwise soon exhausted. Most estates possess within themselves the elements sufficient to keep them in perpetual fertility. How many millions of dollars would have been saved to the State of New-York, had the farmers of the past generation, known, appreciated, and profited by this great, vital, and fundamental law, that all animal and vegetable matter taken from the soil, or its equivalent, must be restored to it or certain ruin commences.

I know it is somewhat the fashion to decry Agricultural Chemistry, because its analyses of soils have not proved entirely satisfactory. But if Chemistry ever analyzed a shovelful of soil, its services would be invaluable in the provinces named. When Chemistry takes the mineral coal, or the medicinal spring, upon a farmer's land, and tells him unerringly the component parts and value, when it takes his food, and the food of his cattle, and tells him what nutriment it contains, when it exposes every adulteration of food, or liquids, or drugs, in which commerce deals, when it detects poison and arrests crime, when it carries its lamp among the miners in the bowels of the earth, and there holds guardianship over human life itself, and we recollect that these acts are but types of its mysterious agency, it ill becomes us to wrest from it, its scales, its crucibles, and its re-agents, when they applied to the earth, on whose productions teeming millions of men, and myriads of animals subsist, to compel her to yield up more of her secrets for amelioration of the condition of the race. When Franklin drew down the lightning with his kite, the skeptics of those days doubtless derided his experiments as futile and dangerous, yet the last reverberations of the cannon have hardly died upon the ear, the last flickering blaze of the bonfires have hardly expired, that celebrated the the most important achievement of man, since the discovery of this continent by Columbus, of which Franklin's experiment was the germ. Let us not discourage science from delving into the earth, if such are the prolific results of her researches elsewhere.

Geology would constantly aid the farmer in a knowledge of the composition of soils. But the bearings of this science upon culture, open too a wide field for discussion. There can be nothing so startling in romance, or instructive in story, as the mutations of the earth through its geological epochs, till it finally became suitable for the habitation of man.

Mineralogy, Meteorology, Natural History are all subsidiary to the pursuits of the farmer.

The study of Entomology, with the aid of the microscope, is destined to prove of great value to agriculture. Every leaf, every animal is covered with parasites. Insect life crawls and flies everywhere. It is visible and invisible. It is a protective sentinel, or a destructive pest. Some insects live by the destruction of our crops. Some are predatory, and live on insects, or the eggs of insects, most noxious to man. Each crop, each fruit, has its peculiar enemies,

in infinite variety. No revelations can be more beautiful and at the same time more valuable, than those of the microscope.

The functions, habits, and food of insects are important subjects of investigation. The State appropriation to promote the investigations of Dr. Fitch, the Entomologist of this Society, was therefore an enlightened and judicious act. The most terrible scourge ever known to the wheat crop, the Midge, is now committing its ravages over the continent. Your able and efficient Secretary estimated the loss by its ravages in 1854, in the State of New-York alone, at fifteen millions of dollars. It has carried its wide devastation over the wheat zone to the Mississippi. The habits of this insect are partially understood. How and when it deposits its eggs, how it is hatched and fed on the tender kernals of wheat as a grub, how it falls to the earth, and burrow still the following year, how it is warmed into life, and emerges a winged insect, just when the wheat is in the milk, and deposits its eggs again—so much is known, but in all attempts to arrest or destroy it, we are baffled. He would be ranked among the benefactors of mankind, who should discover how to arrest or destroy it. How often does the farmer boast, that he knows all about farming, and asks nothing of science. Yet here is a minute insect, not one-tenth of an inch in length, that contests with proud man his right to the most important article of human food, and wrests it from him. Man may arrogate omniscience in his calling, but he cannot cope with this insignificant Midge.

The more extended knowledge a farmer possesses of mathematics, the more ready he is for emergencies in his private business, and the more useful he proves as a citizen. He need not be a profound mathematician. He may not be able to calculate the orbit of the comet, now visible in our firmament, but no day escapes when a knowledge of surveying, leveling, gauging, and of measuring solids and areas generally, would not be valuable. That intuitive aptness in the application of mechanical powers, which enables some men to avail themselves skilfully and at once of machinery, is possessed by few. Precise mathematical knowledge is required by most minds for its comprehension. Even in the elementary branch of Arithmetic, the farmer who is most prompt and rapid in the application of his knowledge, is the most useful citizen in his vicinity.

A thorough knowledge of the Constitution of the United States, and his own State, should be acquired by every good citizen in early life. So should he be able to draught common legal instruments. A member of the Senate of a neighboring State, himself a practical farmer, informed me that he was the only man, within six miles of him, not a professional man, who could draught a legal instrument. A knowledge of Book-Keeping and Accounts, is as necessary, and should be deemed as indispensable to any farmer, who has business to transact, as the capacity to raise the crops in which he deals.

I think I have said enough to prove that every Art and every Science may conspire to increase his enjoyments and profits, and confer dignity and grace upon the tiller of the soil. It is the Art of Arts, the Science of Sciences, where physical and intellectual capacity, judgment, taste, and learning may aid to produce the most triumphant success. It is an erroneous, a contemptible idea, that the highest degree of education cannot be employed in one calling, as well as another. Indeed I can conceive of no life, that followed in its comprehensive spirit and grasp, would call more varied powers and acquisitions into action, inspire more of the faculties and energies of man, and test his ingenuity more frequently, than the life of a farmer. The application of Science to Agriculture has

just begun, and is destined to produce wonderful changes in the production of food and clothing for man. While his profession is liberal, and his sphere of inquiry wide, while his pursuit is calculated to produce harmonious development of mind and body, and continuous health, this ever buoyant, ever cheering, ever glorious reflection must dwell upon the mind of the tiller of soil, that he helps to create his own support, and clothe and feed his brother man, instead of consuming their substance. In witnessing the development of the crop, from the germination of the seed, till his golden harvests are housed, he need not have perpetrated a wrong. No reckless experiment of life and property, no compromise with perjury or crime, no trickery nor fraud, nor extortion, nor usury, need creep in, to poison the gratification, with which he can proudly smile upon his conquests.

STATISTICS OF AGRICULTURAL EDUCATION AT HOME.

The whole population of the State of New-York in 1850 was 3,097,394. Of this number about 16 per cent were between the ages of sixteen and twenty-two, or nearly 500,000. Of these rather more than one-half were females, leaving however nearly 250,000 young men. —There were only 2673 enrolled in all the Colleges of the State. Allow four times, six times, yea, nearly nine times as many to enjoy good advantages of education in advanced Schools and Academies, making the whole number 25,000, and then allow for the class so irremediably stupid, that they will not seek, and could not profit perhaps by education, and for those who possess such vitality and energy of mind, as to overleap all barriers, and drink in education, as they live and move, 25,000 more, and you still have 200,000 of the young men of New-York, deprived of all education beyond that which the meager Common School affords. It may be said that a large proportion of these youth, in such a State as this, reside in cities and towns. Very well! It only changes the argument, and proves the necessity of Industrial, as well as Agricultural Colleges for your communities. We have, or soon shall have, in Michigan, 50,000 young men, almost entirely among the rural population, destitute of means of acquiring such education as their age and calling imperatively demand. I omit mention of females, because unnecessary to my argument. Female education of an equally elevated character, must keep pace, however, with that of the male population.

Do existing Educational Institutions afford relief? School officers will admit that the Common Schools, in the main reputable, are often a mere farce. Thousands of the young throw up their books in despair because they have outstripped their instructors, and forego all further advantages of instruction.

The great *desideratum*, the great need is, a chance for the boy to aid himself. While at the Common School, the boy works upon is father's farm. He earns his education as he proceeds. Labor is there honorable. But he can use his physical system to improve his brain in no wider sphere. Tens of thousands crave the chance to labor three or four hours per day, supporting themselves while improving their minds, but no opportunities are afforded. It may be said that High Schools and Academies are accessible, but it is obvious, that expense and distance render them unavailable to the mass.

Those who resort to the higher Colleges, even to pursue a scientific course of study, become enervated, or at least indifferent to physical toil, and going there at an age when they are most impressible, they are borne along in the irresistible current of opinions and sympathies prevailing there, and not one in fifty becomes a cultivator of the soil. Double, treble, quadruple, the accommo-

dations of existing Universities, and they could receive but a mere fraction of the youth clamoring for education, if any suitable facilities were allowed them to help themselves.

A new order of Institutions has therefore become an absolute necessity, where a student can, in part at least, educate himself, where his physical faculties are preserved in their full vigor and elasticity, and where those studies which are most useful to a cultivator of the soil shall be embraced, while those which are least valuable shall be discarded. To remedy this yawning deficiency, Agricultural and Industrial Colleges are organized in several of the States, and initiatory steps are taken in other States to establish them.

The Agricultural College of the State of Michigan has been in actual operation since May 13th, 1857. Its Faculty consists of a President and four Professors, and it has accommodations at present for 100 students. It was created in obedience to a requisition of the Revised Constitution of 1850, and organized under a law of 1855. The Farm consists of 676 acres. Its design is to unite physical with mental culture, to afford the student a chance to earn in part his own education, and a chance to apply himself, free of tuition, to those sciences and practical arts, that may render him a scientific farmer and an enlightened citizen. The effort has attracted anxious attention throughout the Union. Applications from other States and Canada have been made sufficient to fill the Institution. This is the first State Institution, and the only exclusively Agricultural one yet in operation on this side of the Atlantic.

The New-York State Agricultural College was incorporated in 1853. Its creation was principally due to the energy and public spirit of the late lamented JOHN DELAFIELD, who was chosen its first President. After his death, the work was suspended. It was revived in 1856. The farm, embracing 686 acres, was then purchased at a cost of $45,000, principally by subscriptions of the farmers of Seneca County. It is situated on an eligible and commanding position, stretching from the village of Ovid to Seneca Lake. A loan by the State of $40,000, for twenty years without interest, is secured on 400 acres of the estate. Instruction in those sciences and arts, calculated to enlighten the farmer and illustrate his calling, is to be combined in its system of education. The Trustees have contracted for the erection of a portion of the main College building, to be completed in one year, for the accommodation of 125 to 150 students. Its available funds for the purpose, now consist of $35,000, not so much as the cost of a single School House in many of your towns, a sum in sad contrast with the ostentatious exhibit around us of the Agricultural capacities and wealth of your Empire State.

The People's College at Havana, Schuyler County, in this State, was incorporated in 1853, and organized in 1857. Its Charter contemplates a capital of $250,000, which may be increased to $500,000, of which enough has been already subscribed to encourage the belief that the experiment will be fairly tested. The corner stone of the main edifice was laid on the second day of September last, and the Trustees announce their intention of opening the Institution within one year from this time. It should perhaps be designated as an Industrial, rather than Agricultural College, for it embraces various kinds of manual labor in its plan, while the farm consists of but 200 acres of land. Labor is to be compulsory on both teacher and student, a plan, if successful, admirably adapted to prepare a new class of Professors, such as new Institutions of the age will demand. It contemplates a wide range of study, no less, in the language of its Charter, than "Literature, Science, Arts and Agriculture."

The Farmers' High School of Pennsylvania was incorporated in 1855. It is located nine miles south-west of Bellefonte, in Centre County, very near the center of the State, on 200 acres of land, the munificent gift of Gen. JAMES IRVIN. The Farm, to which 200 acres have been added by purchase, is being brought rapidly into a high state of cultivation. Its resources consist of $10,000 donated by the State Agricultural Society, $10,000 subscribed by the citizens of Centre County, $5,000 a bequest of Elliot Cresson, and $25,000 appropriated by the State. The further sum of $25,000 has been appropriated by the State on condition that an equal sum be subscribed by citizens. Its whole means, therefore, if the subscription is completed, of which no doubt remains, are $100,000, and the farm donated by Gen. IRVIN, estimated at $12,000. One wing of the main College building is nearly erected, and the present design of the Trustees, is to open the Institution on the 15th of February next, with 100 students, to be increased to 400.

The Maryland Agricultural College was incorporated by the State in 1856, and $6,000 per annum appropriated towards its support provided subscriptions to the amount of $50,000 were first secured. That object having been effected during the last winter, the Institution was organized and the College located on a tract of 428 acres of land, purchased at Bladensburg, near Washington, from the estate of Hon. C. B. CALVERT, the largest Stockholder and President of the Board of Trustees. The corner stone of an extensive edifice was laid on the 24th of August last, and the design is to push the work to rapid conclusion. Its educational plan proposes the development of the whole Man—moral, physical and intellectual.

The State Agricultural College of Iowa was incorporated in March last. The preliminary appropriations are $10,000, and five sections of very valuable lands heretofore granted by Congress for erection of Capitol buildings. Localities vie with each other in offers of money or land to secure its location, varying in value from $10,000 to $25,000. It is to be fully organized and located in January next.

The Minnesota Agricultural College was incorporated during the present year. It is located at Glencoe, McLeod County. The farm consists at present of 320 acres of land. Its design, scope and principal features, as well as those of the Iowa College, closely resemble those of the Agricultural College of Michigan.

The Agricultural Colleges of Michigan, Iowa, and Minnesota, are State Institutions. Those of New-York, Pennsylvania, and Maryland, are the joint works of public spirited individuals and the respective States.

In anticipation of all these efforts, the Farmers' College near Cincinnati, Ohio, under the auspices of F. G. CARY, Esq., and other public spirited gentlemen, has for several years promoted the cultivation of the earth in conjunction with literary and scientific pursuits. It is however a Classical Institution, embracing other objects, and prescribed labor in the culture of the soil, is not a compulsory feature of its plan.

A bill establishing an Agricultural College is now pending before the Legislature of Ohio, and will probably be reached at its adjourned session, the approaching winter. Its friends are not sanguine of its success. Whether it passed or not, the farmers of Ohio have 150,000 sons deprived of all possible means of education beyond the Common School.

The Legislature of Massachusetts, in 1856, incorporated a School of Agriculture, which must be dependent entirely on subscriptions for its future establishment. In 1850, Massachusetts in advance of other States, appointed Commissioners to investigate the subject, and Prof. HITCHCOCK made an elaborate

Report relative to Agricultural Colleges in Europe. A plan was recommended for Agricultural Education, but no effective action was taken on the subject. Two citizens of Massachusetts, BENJAMIN BUSSEY, of Roxbury, and OLIVER SMITH, of Hatfield, have made princely bequests to be used in some remote future contingencies for founding Agricultural Colleges, but available for no immediate use.

Efforts are being made to establish Agricultural Colleges also in Virginia, South Carolina, Alabama and Wisconsin.

Agricultural Professorships have been endowed in the Universities of Virginia and Georgia, by public spirited individuals, and also exist in several other of the Classical Colleges of the country. In Michigan the University has such a Professorship. Scientific Schools of an elevated character have been connected with many of the older Institutions, These will all be merged in the several Institutions with which they are allied. Superior facilities will be thus afforded for a man already educated to acquire a better knowledge of Agriculture, as an accomplishment, but very little is thus effected towards filling a deplorable hiatus in our Educational Systems.

AGRICULTURAL SCHOOLS ABROAD.

It will be perceived that the enterprises in this country designed to meet the great necessity, are all in embryo. They are the initial attempts to satisfy an irresistable craving for an additional means of education. In Europe, however, Agricultural and Industrial Colleges are no longer an experiment. The neglect of our government stands in woful contrast to the paternal care exercised by the governments of Europe. We have no Department of Agriculture, not even a Bureau of a department. Our government may expend in ten years, on the whole subject of Agriculture, as much as it would cost to build a first class steam frigate to sail around the world on pleasure excursions or rot in the docks. The Senate, during the last Congress, abolished its Committee on Agriculture, and thus before the world, ignored the subject. In France the subject is under the charge of the Minister of Agriculture, Commerce and Public Works; in Prussia, a Board of Rural Economy, subordinated to the Minister of Agriculture has control of the subject; in Russia it is under the supervision of the Minister of Public Domains. The other nations of Europe generally take the subject under governmental patronage and custody.

In Prussia, Agricultural Education is perhaps best systematised. Prussia has 418 Agricultural Societies of different grades, all of which are affiliated together, and are subordinate to and report to the Board of Rural Economy. In all Germany, there are 1000 more such societies. Prussia supports fifty-one Agricultural periodicals. In all Germany there are eighty-nine such periodicals. Societies and Periodicals, as well as schools, are devoted to special objects, bestowing their whole attention to perfecting some single branch of culture. Prussia has five Agricultural Colleges of a high order, twenty-eight Elementary Colleges, and fifty-seven Special Schools for affording instruction in Horticulture, Flax Culture, Sheep Raising, &c., and seventy-two Model and Experimental Farms. But the supervisory functions of the Government do not end here. It aids in the dissemination of the best seeds and best machinery for Flax culture. It distributes cuttings and seeds of the mulberry, and reeling and other machinery to promote Silk culture. It promotes Pomological culture in the same efficient manner. So it encourages the propagation of the best breeds of Horses. Draining engineers are detached to different parts of the kingdom to instruct the people, indicate the proper channels for drainage, and systematise it in the most economical manner. Lessened annual expense of the public

roads, improved general health, and increased production of the kingdom are the ample remuneration to the Government.

In France there is an Agronomic Institute, on a portion of the premises of the palace of Versailles. There are three Imperial Colleges of Agriculture of a superior kind. There are eighty-six lesser Schools, one in each of the departments. There are also polytechnic and Industrial Schools of a somewhat kindred nature. To the three National Veterinary Colleges, I have already alluded.

Russia appreciates the importance of stimulating Agriculture as the sure foundation of prosperity and colossal power. Her efforts are comprehensive and vigorous. The government supplies lands for various tests and experiments. Importation of implements free of duty has been allowed. Fairs are held in the districts of the Empire, and statistics are published at the public expense. Periodicals are published and gratuitously distributed, particularly among the clergy, that they may become missionaries of Agriculture as well as of the Gospel. Special schools are established for rearing of Horses and Sheep, for culture of Flax, Silk, &c., and for the study of epidemics among cattle. A garden of an hundred acres was established fifty years ago, near Odessa, on the Black Sea, for the acclimation of seeds, fruits and plants of Southern Europe, and subsequently ten other gardens for similar purposes. Agents are dispatched not only over the empire, but to foreign countries, to obtain information and improvements for dissemination. There is one Imperial College at Gory Goretzk, and eight other colleges are established in different districts of the empire, all well endowed, and each possessing an extensive Model Farm, the least of which is fifteen hundred acres. In addition to these, are numerous Farm Schools. A Technological Institute for education of Mechanics, Chemists and Engineers is also established. Graduates of the higher institutions have been sent abroad to be better fitted for professors at home. The students in the eight principal colleges are educated entirely at the public expense, and when they graduate are supplied gratuitously with books, seeds and tools; yea, more, the most meritorious are supplied with farms near their native villages as rewards for their proficiency.

An intelligent Russian informed me that if the schools of Russia had done no other service than the eradication of superstitions and prejudices, their cost was well repaid.

Great Britain has established a system of Agricultural Schools for Ireland, but none for the rest of the empire. The principal Agricultural College in England is at Cirencester. It is designed for the gentry only, and is an expensive institution. The question may be asked, Why has England, the foremost country in Agriculture, the fewest schools? The reason is obvious. The landlord, the steward, the man of science, and the tenant farmer who employs the laborers, confer together on all proposed improvements. The landlord has the authority and the capital to execute their resolves. *They* are the Agricultural Colleges. Thus science, capital and skill are called into requisition. Hence the island presents a scene of unrivaled rural beauty, and groans under her abundant productions.

Austria, Saxony, Bavaria, Sweden, Wurtemburg, Belgium, and other nations of Europe, earnestly promote Agricultural education.

The first instruction of the kind in Europe was at Hofwyl in Switzerland, founded by Fellenburg, a name illustrious in the annals of education. The model school, perhaps of all Europe, is that of Hohenheim, in Wurtemberg. The other most remarkable colleges are Cirencester in England, Grignon in

France, Moglin in Prussia, and Gory Goretzk in Russia. In 1850, Prof. Hitchcock enumerated 352 Agricultural Institutions in Europe, but he omitted those of Sweden, and some other countries. They have been greatly multiplied since that time. I think there are now 500 Colleges, Schools and Model Farms in Europe, mostly the creation of the last twenty years. Their success is no longer in controversy. Neither prejudice nor ignorance is allowed to crush them. They are regarded as a great and beneficient agency, which governments, in the exercise of a benignant guardianship, are bound to exert, in increasing the productions of the earth, and promoting the welfare of the race. They appreciate the great fact that the surest way to promote the prosperity of the State is to enlighten the individual and multiply his energies. I can only make an approximate estimate, but there are probably in all the schools of Europe at the present time, 2000 professors and teachers, and 50,000 students are in attendance upon them.

DESIGN, THE MASTERY OF THE PHYSICAL SCIENCES, AND THEIR PRACTICAL APPLICATION.

I have said nothing relative in the course of studies, the discipline, or the plan in which the European schools are conducted. It is sufficient to say that the design of them all is a mastery of the physical sciences and practical arts that bear upon Agriculture, and the harmonious union of study with labor. Their institutions, however, furnish no models for us. The lower order of schools in Ireland and Russia are for the peasantry, and of a grade not elevated enough to to prove useful in this country. The best of their colleges are designed for the education of stewards, agents, and teachers, and not for proprietors who labor with their own hands, and who combine, like our countrymen, all the characteristics of landlord, tenant and laborer, in the same man.

OBJECTIONS TO AGRICULTURAL SCHOOLS.

The objections to such institutions in this country will be numerous, in spite of the necessity for them. The first question asked is, "Do you expect to liberally educate the whole mass?" That s impossible. But a large proportion, ten times as many as now are, can be highly educated. Large numbers can be rendered intelligent citizens, capable of performing all their several duties, and lingering prejudices can be eradicated from their minds.

The assumption will be made that if we need one school, we need an hundred. That is true. But they are novel. They must be built up gradually. No sufficient teachers can be obtained. I doubt whether instruction could be had for ten colleges in the whole State of New-York. No plans can be thoroughly successful, till a new race of men are educated in these very colleges, for Professors and Teachers.

The general objection urged with a singular dogmatism, is that labor and study are incompatible. It is not so in tender boyhood, where the boy actually performs drudgeries, while mastering rudiments. It is not so in mature manhood, where hundreds of men, not only labor, but support families, and acquire funds of knowledge while engaged in manual toil. There is a Senator in the Congress of the United States who was taught to read and write after he was of age, and after he was married. GEORGE STEPHENSON, the great English engineer, began his career as a breakman, married young, and made nearly all of his mental acquisitions while pressed down by crushing labors. Indeed, courage, thought, labor, and study, severe and unremitting, are the only conditions of lofty success to the mature man. Why then this assumption, that labor and study are incompatible just at the very period of life, when the body is most vigorous, and the mind most free from anxiety? It originates in a diseased

public opinion. It continues to exist, because no philosophical plan of combining labor and study has had a fair trial.

It is true, that Manual Labor Schools have generally been unsuccessful. The causes are evident. They have often withered under the frowns and incredulity of the public. Often the labor selected has been confining, and fatiguing toil, by no tie connected with any pursuit in which the heart was enlisted. Often too, labor has been elective, one portion of the students working while others were exempt. Castes were inevitable from such incongruity, and the death of such an Institution was almost coeval with its inauguration.

The institution in Michigan has been in operation about eighteen months. Labor is there compulsory on all. So far, all the labor has been cheerfully performed. Opinion among themselves has a powerful influence in holding each student to a manly performance of all his duties. Generally those who are most faithful in study, are foremost in their sports, and foremost in their work also. So too, fidelity does not depend upon the fact whether a young man comes from town or country, but upon his energy and intrinsic manliness. There is no shrinking from duties, even those which are most offensive and most severe. The farm was located in a forest. Lands have been reclaimed by the students, such as are generally neglected as irreclaimable. For eight months, except students and those in official positions, but a single man, and he the porter of the kitchen, has been regularly employed on the estate. All the repairs in wood are done by the student. Clearing and ditching, planting and harvesting has been done by the students. All the teams and stock are in daily charge of the students. Circumstances a short time since, deprived us of every person employed in the culinary department. With the aid of three or four persons, the students performed all the duties connected with that department for more than a fortnight. Had the Institution been deprived of all external aid, the meals would have been well prepared, and punctual as usual, and the spectacle would have been presented, of a College of Students and Professors entirely self-reliant and independent. So far, this is compatibility of labor and study. I recently saw an assumption in a public paper, that if thirty institutions were started for the purpose, and the compatibility of labor and study was established in a single one of them, success would be a full remuneration for the cost of the whole. I would not assume that it is proved in Michigan, but I assume that in spite of most formidable obstacles, it is rapidly being demostrated.

The Institution has met with trials and misfortunes. It should have been located on land thoroughly subdued, already a model farm. An experiment sure to encounter the numberless difficulties inevitable to all new enterprises, and sure to incur malignant opposition from without, should have been placed where all the labor could be made at once interesting and attractive. As it is, the institution is compelled to suffer all the risks, toils, trials, and the diseases, this year sweeping and afflictive, of a new country, such as break down the constitutions, crush the spirits, and abridge or destroy the lives of the first generation of pioneers. It may therefore yet fail, and prove a disastrous experiment. But the philosophy of the plan, in many vital points, is no less vindicated.

Another fact is already established in the Institution, that the student makes more rapid intellectual progress than though he performed no labor at all. The invigoration of body re-acts upon the mind, inspiring it with new power. This should be and proves to be a natural necessity.

It has been urged against such Institutions, that they will be mere recepta-

cles of the sons of the rich, sent there to become familiarized with labor and the use of tools. The exact reverse is the primary design. The chief object to be kept in view, is to enlighten the toiler with the truths of science, that the man who works with the hands may think with the brain. In our experience, the very class who were destitute of early advantages have sought the institution most eagerly, and best appreciated its advantages. A system of labor has been harmonized with a system of study. The students are credited with their labor three hours per day, and assessed with their board at cost. The balances are struck each term, and inconsiderable as these balances are, many students have been compelled to leave and abandon further hope of education, because unable pay them.

We have discovered that great benefits result from attrition and constant discussion among the students. The farmer employed on the estate, before he had been there six months, declared that he would not part with the knowledge he had obtained for a thousand dollars. The continual exercise of mind, and comparison of opinions, has disclosed to him the nature of the fatal blunders which young farmers commit, and taught him how they might be shunned.

The assumption is made, that a man can learn nothing practical in such a school. That depends upon the discipline. Our experience is, that acquisitions are very rapid in this respect. But allow that a young man learned little in mere handicraft, the collateral education will far more than repay the costs. His superior English education, his improved physical capacities, his superior knowledge in regard to food for his family and his stock, and the preservation of health, his general readiness and capacity in mastering business, and executing public trusts—all these acquirements are invaluable, and cannot be earned by the exercise of his own faculties in any existing Institution.

I met a man last year, who exultingly declared that there was but one way to hoe, but one way to plow, but one way to harvest, and books and schools were therefore futile. Fifty years ago, when the traveler was seven or eight days in making a voyage from New-York to Albany, in a crazy sloop, there was but one way to travel. Before Arkwright's spinning jenny, there was but one way to spin. Before Prof. MAURY published his Theory of Winds and Currents, there was but one way to sail. The voyage from New-York to San Francisco, which would formerly have taken six or seven months, has been performed in less than ninety days. Twenty years ago there was but one way to communicate with London. It took three months. The practicability is now proved of dispatching a message from London after breakfast and have it arrive in New-York before daylight. If there is but one way to farm it, that is a very poor way, which affords an average crop of less than eleven bushels of wheat per acre over such a country as we possess.

This same friend called my attention to a Pennsylvania German, who could hardly read and write, and had a great contempt for papers and books on farming, but was the best farmer in his neighborhood. I told him that I thought his basket would not hold water, and that this model farmer, owed everything to the spirit of improvement abroad. His plow was a Troy plow, instead of the old shaky implement, with wooden mould board sheathed with iron, with straight handles tipped with cow-horns, which he used when a boy. His implements were mostly light, graceful, elastic ones, of recent patterns. His fruit was budded and grafted from such as his neighbors had imported from the best nurseries. Whatever superior cattle, or sheep, or swine he had, were obtained from neighbors at no extra cost. The nails he shingled his house with

cost but one-third as much as those which his father used. When he got up in the morning, he lighted his fire in a second with a friction match, instead of tugging ten minutes with a flint and steel and tinder box, and he complacently composed himself to sleep at night under sheeting that cost eight cents per yard, as good as that which cost fifty cents when he was a child. The story is told of Plato, that having described man to be a bibed without feathers, Diogenes, the cynic, laid a plucked rooster before him and exclaimed "Behold Plato's man!" If our model farmer was deprived of all the benefits he had derived from that progress which he despised, if he was stripped of all borrowed plumes, he would be as innocent of feathers as Plato's man.

It is objected that graduates will come forth from such colleges crammed with all sorts of visionary notions and theories. The design is to effect the contrary result. It is to teach men to subordinate experience, and books, and speculations, to great natural laws, to learn and acquire the tests by which truth can be sifted from error. Let me illustrate. You will hear men, even at this day, defend the custom of wintering animals under severe exposures, rather than stabling them It is an established natural law, that vital heat is created by contact of the carbon of the food with the oxygen of the air, existing in the system or inhaled into the lungs, and that the more heat is demanded by exposure the more waste of the animal, and the more ravenous consumption of food. Natural law, then, as well as economy and humanity, enjoins that cattle should be wintered in clean, comfortable, well-ventilated buildings. Experience and argument weigh nothing against a natural law.

POSSIBILITY OF FAILURE.

But I cannot follow these objections further. The earth revolves in its orbit in obedience to law. The stone I throw into the air falls in obedience to law. The circulation of the blood and the operation of the human functions, are governed by law. Everything blooms and decays on the surface of the earth, in obedience to immutable laws. It is the province of science to discover and elucidate those laws. It should be the province of Agricultural education to master and enforce them. The work before us, is a great and significant movement—it may affect the welfare of millions. All that is anticipated by sanguine men may not be realized. Something may be done to substitute intelligence for ignorance, energy for luck, health for disease, and science for chance.

Institutions of the kind may fail. I think many of them will fail. I understand that your own institution, even in its infancy, has been subject to calumnies and criticism, calculated to benumb public sympathy, and paralyze the energies of its friends. There will always be narrow-minded men, who will gloat over every misfortune, every mistake, and every failure. Nothing short of inspiration will save men from errors. But should an hundred Institutions fail there yet stand your 200,000 young men in New-York, and eight or ten times as many in the whole Union, panting for education. There they remain with minds to educate, and physical capacities adequate to earning an education, if chances were afforded. No facilities will be provided for meeting a recognized demand of the age. When I say all this, I do not mean to decry the Common School or the University. "To the end that learning may not perish in the graves of our fore-fathers, be it ordained that a Free School shall be maintained by every fifty families." Such was that early and significant ordinance of the Pilgrim Fathers, which has performed so invaluable an agency in the promotion of civilization. I was born almost within hearing of the wintry surges

that beat upon Plymouth Rock. I was educated in one the most venerable Institutions of New-England, where I could look out from my window, and see that majestic shaft rising upon Bunker Hill, a perpetual monument to the intelligence, as well as the valor and patriotism of our fore-fathers, and I shall never cease to appreciate and defend all those Institutions of learning, which I was taught to cherish around those hollowed spots. But another and an additional agency is now demanded, for the education of the *new man*, whom our political condition has created, in the use and conversion of the new modern physical sciences, to the highest purposes of progress and civilization, a range of study not possible, and never contemplated, when the existing University was developed.

DIFFICULTIES—COURSE OF STUDIES—AID.

But it is no holiday business to establish such an Institution as I have foreshadowed. The farm, buildings, laboratory, library, museums, stock and implements, must cost a large sum. It must be carried forward as an important public object, and enlist general sympathy and support. What shall be the chief features of such Institutions, what their matured organization, and what the most eligible course of studies, time must determine. It is with diffidence, therefore, that I give a mere skeleton.

Students for admission should pass a good examination in the branches taught in the best common schools.

The Course of study should extend over a period of four years at least. It should embrace a mastery of the English language, Mathematics, Civil Engineering, Chemistry, Animal and Vegetable Physiology, Entomology, Botany, Geology, Mineralogy, Meteorology, the Veterinary Art, Horticulture, Political Economy, Constitutional Laws, Book Keeping, and the Application of Science to the Mechanical Arts.

Testimonials or Diplomas should be given to those who pursue a full course.

Tuition should be free to all, except to those who do not intend to pursue the life of a farmer, or who enter to remain for a limited period.

The Farm should be in as complete a state of preparation for use as the lodging-rooms, books, laboratory, or blackboard.

The first Institution in a State should have a full corps of Professors, and the instruction given should be comprehensive and thorough.

Institutions should be endowed on a permanent and independent basis, that they may be "good enough for the richest, and cheap enough for the poorest."

Impressed with the necessity of more liberal aid than private individuals or capricious State Legislatures would be likely to afford, and feeling that in their infancy they must be independent of popular prejudice or bigoted opposition, earnest friends have looked with confidence to the General Government for adequate grants of the public domain for endowments. It seemed fit that Institutions, the success of which must enure to the national benefit, should be a subject of national encouragement. Accordingly the Bill introduced by Mr. MORRELL, of Vermont, and sustained by an impregnable array of facts and argument, in a speech delivered by him, and in Mr. WALBRIDGE'S Report from the minority of the Committee on Public Lands, passed the House of Representatives at the last session, by a majority of five votes. Seven members of the House from the State of New-York voted against it. It now awaits the action of of the Senate at the approaching session. The bill proposes to grant to the several States, "for the benefit of Agriculture and the Mechanic Arts," 20,000 acres of land for each Senator and Representative, to which each State is entitled. Ten per cent. of the grant can be used for the purchase of farms, but none of

it can be converted to the erection of buildings. By reference to the latest Report of the General Land Office, it appears that we recently possessed 1,088,792,498 acres of unsold public domain. The grant proposed by the bill in question does not amount to two-thirds of one per cent. Can any one doubt that our great landed inheritance would be enhanced in value ten times that per centage by the creation of a cordon of Colleges throughout the States, where those studies are taught which conspire to render men more enlightened tillers of the soil? From a report in 1854, it appears that an aggregate of 4,060,704 acres of land had been granted to fifteen States of the Union, for the endowment of Universities. More than 60,000,000 of acres have been appropriated to the establishment of Common Schools. It seems to have become the unquestioned policy of the Government to set apart a portion of the Public Lands, as a sacred fund, for the education of men, who and whose posterity are to inhabit them. Surely if it is a legitimate use of the lands to devote them to the promotion of Professional and Classical learning, for still more powerful reasons, justice and expediency demand a share of them for instruction of men in those Sciences and Arts which bear directly upon Industrial and especially Agricultural pursuits. We support two National Schools for instruction of men in the Arts of destruction. Let something be done for the support of schools for instruction in the Arts of production. Public sentiment seems so irresistible in favor of this measure, that we may rationally hope for its success, and the consequent liberal endowment of one Industrial Agricultural College at least in each of the States of the Union.

TO FARMERS.

It is a great law pervading all life, that like produces like. Let every farmer be stimulated to improve all around him. Let him have the best horses, and the best cattle, the best sheep, and the best swine, the best wheat and the best corn, the best fruit, and the best vegetables, and the best implements of every kind. Retain the best, and live upon it. Sell the poorest. Possess nothing which is too good for your own family. Let your homes be the homes of taste as well as the homes of abundance. Plant the orchard that it may rain its abundance at your feet. Let the fragrance of flowers fill the air about your dwellings, and the vine clamber and twine around your doorways. Push away the dingy curtains that hang like a pall over the windows, and throw open that somber parlor, heretofore used only for weddings and funerals. When the wintry storms begin to rage without, kindle the blazing fire, and let its cheerful glow encourage social intercourse. If addicted to the use of tobacco and strong drinks, abandon them. The money saved in five years would carpet your houses, crowd your shelves with choice books, and adorn your walls with pictures. Thus you will make your homes more attractive to your sons, than the tavern, the village, or doubtful associations. Educate all your children, male and female, as thoroughly as your opportunities allow, and retain the most promising at home, to cheer, to dignify and to ennoble your own calling.

These are your private and your social duties, but remember that you have wider responsibilities. You have duties to the past, duties to the present, duties to the future. Transmit the share of earth which you have inherited, improved and embellished by your labor and taste. Remember that the character impressed upon this generation moulds the future communities who succeed you. The surges of migration westward are pouring on without abatement.

"Multitudes, like which the populous North
Poured never from her frozen loins, to pass
Rhene or the Danau, when her barbarous sons
Came like a deluge on the South."

Every improvement calculated to abridge labor, increases means of subsistence, and multiplies population. The Atlantic Telegraph itself "annihilates time and space," brings men into close communion, and invites fresh hordes to our shores from the other hemisphere. That population mingles with our own, and for the character of the blended race and their Institutions, even to the Pacific shores, this generation and this community, are in part responsible. Assist to encircle the continent, therefore, not with Railroads only, not with Telegraphs only, but with all the institutions and sentiments of a glorious civilization, electric with the vital current of human freedom. And remember that the proud spectacle of *an educated people*, dominant over the continent, will never be realized, unless some additional means are devised to educate the whole youth of the rural population.

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We have been compelled by want of space to omit important portions of the above address before the N. Y. State Ag. Soc. For the divisions and interheadings, which are ours, the author we trust will excuse us.—Ed.

"WHOEVER MAKES TWO SPIRES OF GRASS GROW," ETC.

Ed. Farmers' Magazine:—As an Eastern man, you know that in Massachusetts we have to ascertain, as far as possible, the very best process in managing soil, in procuring and adapting our fertilizers and seeds, and the culture of our crops, also the time of sowing, and the amount of application, in order to *pay* and to *make* a little. Personal experiments are also demanded, and intercourse with brother farmers, individually and in societies, and last, but not least, reading our "agricultural papers," and contributing to their columns of our mistakes, discoveries, or successes, for the good of the yeomanry, while fields and fruits are annually improving. With this in view, I offer you a statement of my course with pine plain and other light soils for pasturing, which has been quite profitable, where there is little or nothing growing, or the land is capable of doing better, but is run out and mossy.

I plow in August or September, harrow finely, and sow rye and bromus, with a variety of grass seed rolled in. This comes up quickly, and grows rapidly if it has a top dressing. By constant feeding it is kept down, and is good feed the second year, when the fine grasses come forward, and the other goes out of course. This done in a pasture, makes no additional fence, but gives many fold of sweet feed for years. I frequently renew *mowing* ground in this way, sowing less rye and more herdsgrass and clover. Top dressing of any kind helps the growth much more than the cost. In the spring, early as possible, pastures may be greatly benefited by only harrowing in half a bushel of rye, a bushel of bromus, and adding one peck of my *Chinese Millet* to the acre, and by rolling, and, if need be, bushing in finer grass seeds. Applying ashes and plaster, superphosphates or guanos, or all of them, once or twice, will make a verdant growth. Cows stick to it, and their milk tells its value. We can well afford a liberal amount, as well as variety of seeds and fertilizers. I have three acres where I cradled a crop of rye, and intend to sow it before the ground freezes, as above stated. It will not come up till spring. In this way I can sow largely of *Millet*, which I could not have done earlier, lest it should be winter killed. This is the most luxuriant growth of feed. Cows are inexpressibly fond of it. I love to walk with a friend into a lot *thus seeded and top dressed*, as well as to see the messes from cows thus fed.

Being attracted by a *plant* growing in a *lady's flower pot*, whose small stem and height, with an unusual amount and

luxuriance of *foliage*, I was charmed, and induced to think it might be transferred to the garden, and if seed could be obtained, become an important acquisition. I succeeded admirably. Watching its progress in my garden till 8 feet high, appeared a head an inch and a half in diameter, and from its pendant stem disclosed eight inches in length, which filled and ripened with heavy seed. With two crops since, I have made various experiments, and have now some 8 or 10 bushels of seed. I call it *my Chinese Millet*, and reckon it gives a better return to be *fed off*, or cut for *summer soiling*, or dried for fodder, than anything else I have tried. I have offered to circulate it gratuitously, in small quantities, to any extent, and have done so, by mail and otherwise, as requested. The seed is prime for poultry, young and old.

BENJAMIN WILLARD.

Lancaster, Mass., Nov. 12, 1858.

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Remarks.—It is that prudent, cautious, *feeling-the-way* effort for improvement, in connection with a home market, created by manufacturing mouths, that is fast changing Massachusetts from one of the worst to one of the best of agricultural States. Where the soil is naturally fertile, farmers are apt to get a little lazy—work hard enough, perhaps, but won't do what is harder—to think, investigate, husband the means for making the land increasingly productive—and so their farms run *down* instead of *up*, while in old Massachusetts the farms are running *up* instead of *down*, and will eventually becomes as good as those of any other State.

This will seem less incredible to people in other parts of the country, if we tell them that of a little more than five million acres in that State, at least three million are half-and-half land, and that a considerable portion of the remainder is made up of small swampy, odd-shaped ravines, till of late supposed to be irreclaimable, or at least not worth reclaiming. Now both these kinds of land are being reclaimed. The half-and-half land, as we have called it, one half a good strong soil of great capability, and the other half made up of boulders, from the size of a goose egg to that of the great rock that Sisiphus couldn't roll up the hill, are being cleared of boulders by little and little, and made into whole land, as good as any other; and the swamps, hitherto unproductive, are slowly becoming decidedly the best of grass lands. Even those pine plain lands, of which our correspondent speaks, but which, by the way, do not abound in that State, are becoming more productive in consequence of a more skillful husbandry. But the great fact on which we predicate our expectations, is, that 100,000 farmers in that State are every year creating a patch, from a few rods to a few acres, out of what was not land before, in any appropriate sense of the term, thus adding to the agricultural domain some 50,000 acres a year of first-rate land, from what before only served to hold the world together. The process is expensive and slow, but sure; and the end—a great while hence, it may be—will be just what we have said.—ED.

DAIRY HUSBANDRY.

MR. FLINT'S book on this subject, which we mentioned in our last, as just published by A. O. Moore, 140 Fulton street, and of which we promised a further notice, when we should have had leisure to examine it more clearly, appears to abound in plain, practical and sound instruction on this important branch of husbandry, and to be just such a book as the farmer in this line needs.

After laying down rules at large, founded, as we believe, in experience and extensive observation, Mr. Flint introduces the following letter, which we believe will be found instructive, and

will enable our readers to form an estimation of the work, whether or not it is what they require.

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LETTER TO A DAIRY-WOMAN.

In the earlier chapters of this work I have spoken to farmers and dairymen of the selection, care, and management of dairy stock. The seventh, eighth, and ninth chapters relate more especially to your department, and on your application and skill will depend chiefly the successful result of the dairy establishment. Of what avail are costly barns, well-selected cows, and judicious feeding, in the butter and cheese dairy, if the products are to be depreciated in value by the imperfect modes of preparing them for the market, where the final judgment is passed upon them, and where it is expected the price will be according to their value?

You have, doubtless, had a much greater practical knowledge and experience of the details of dairy management than I have. For this practice and experience I have the utmost respect; but I have not spoken without a knowledge of the subject. I have made many a cheese, and many a pound of butter, while my observations have extended over all the most important dairy districts of the country, and have not been limited to the practices of any one section, which, however good in themselves, may not be the best. I trust, therefore, you will excuse me for calling your attention to the more important points to which I have alluded; and, if my conclusions happen to differ from your own, in any respect, that you will not discard them as worthless, without first bringing them to the test of careful experiment, when I trust they will be found correct.

I have not written to establish any favorite theory, but simply to inculcate truth, and to aid in developing a most important branch of American industry, which, either directly or indirectly, involves the investment of a vast amount of capital, the aggregate profits of which depend so largely on your judgment and skill.

I need not remind you that any addition, however small, to the market value of each pound of butter or cheese, will largely increase the annual income of your establishment. Nor need I remind you that these articles are generally the last of either the luxuries or the necessaries of life in which city customers are willing to economize. They must and will have a good article, and are ready to pay for it in proportion to its goodness; or, if they desire to economize in butter, it will be in the quantity rather than the quality.

Poor butter is a drug in the market. Nobody wants it, and the dealer often finds it difficult to get it off his hands, when a delicate and finely flavored article attracts attention and secures a ready sale. Some say that poor butter will do for cooking. But a good steak or mutton-chop is too expensive to allow any one to spoil it by the use of a poor quality of butter; and good pastry cooks will tell you that cakes and pies can not be made without good sweet butter, and plenty of it. These dishes relish too well, when properly cooked with nice butter, for any one to tolerate the use of poor butter in them.

On page 220 and elsewhere, I have dwelt on the necessity of extreme cleanliness in all the operations of the dairy; and this is the basis and fundamental principle of your business. I would not suppose, for a moment, that you are lacking in this respect. The enormous quantities of disgusting, streaky, and tallow-like butter that are daily thrust upon the seaboard markets must be due to the carelessness and negligence of heedless men, to exposure to sun and rain, to bad packing, and to delays in transportation. Many of these evils you may not be able to remove, since you cannot follow the article to the market, and see that it arrives safely and un-

tainted. But you can take greater pains, perhaps, in some of the preliminary processes of making, and produce an article that will not be so liable to injure from keeping and transportation; and then, if fault is to be found, it does not rest with you.

I will not suggest the possibility that your ideas of cleanliness and neatness may be at fault; and that what may seem an excess of nicety and scrubbing to you, may appear to be almost slovenliness to some others, whose butter receives the highest price in the market, and always finds the readiest sale. Permit me, however, to refer you to pages 300, 324, and 325, where a detailed account is given of the washings in water and washings in alkali; of the scrubbings, and the scourings, and the scaldings, and the rinsings, which the neat and tidy Dutch dairy-women give all the utensils of the dairy, from the pails to the firkins and the casks, and also to their extreme carefulness that no infectious odor rises from the surroundings. I think you will see that it is a physical impossibility that any taint can affect the atmosphere of the utensils of such a dairy, and that many of the details of their practice may be worthy of imitation in our American dairies.

And here allow me to suggest that, though we may not approve of the general management in any particular section, or any particular dairy, it is rare that there is not something in the practice of that section that is really valuable and worthy of imitation.

On pages 231 and 234 I have called your attention to the use of the sponge and clean cloth for absorbing and removing the butter-milk in the most thorough manner; this I regard as of great importance.

I have stated on page 234 that, under ordinarily favorable circumstances, from twelve to eighteen hours will be sufficient to raise the cream; and that I do not believe it should stand over twenty-four hours under any circumstances. This, I am aware, is very different from the general practice over the country. But, if you will make the experiment in the most careful manner, setting the pans in a good, airy place, and not upon the cellar bottom, I think you will soon agree with me that all you get, after twelve or eighteen hours, under the best circumstances, or at most after twenty-four hours, will detract from the quality and injure the fine and delicate aroma and agreeable taste of the butter to a greater extent than you are aware of. The cream which rises from milk set on the cellar bottom acquires an acrid taste, and can neither produce butter of so fine a quality or so agreeable to the palate as that which rises from milk set on shelves from six to eight feet high, around which there is a full and free circulation of pure air. The latter is sweeter, and appears in much larger quantities in the same time than the former.

If, therefore, you devote your attention to the making of butter to sell fresh in the market, and desire to obtain a reputation which shall aid and secure the quickest sale and the highest price, you will use cream that rises first, and that does not stand too long on the milk. You will churn it properly and patiently, and not with too great haste. You will work it so thoroughly and completely with the butter-worker, and the sponge and cloth, as to remove every particle of buttermilk, never allowing your own or any other hands to touch it. You will keep it at a proper temperature when making, and after it is made, by the judicious use of ice, and avoid exposing it to the bad odors of a musty cellar. You will discard the use of artificial coloring or flavoring matter, and take the utmost care in every process of making. You will stamp your butter tastefully with some mould which can be recognized in the market as yours; as, for instance, your initials, or some form or

figure that will most please the eye and the taste of the customer. You will send it in boxes so perfectly prepared and cleansed as to impart no taste of wood to the butter. If all these things receive due attention, my word for it, the initials or form which you adopt will be inquired after, and you will always find a ready and a willing purchaser at the highest market price.

But if you are differently situated, and it becomes necessary to pack and sell as firkin-butter, let me suggest the necessity of an equal degree of nicety and care in preparation, and that you insist, as one of your rights, that the article be packed in the best of oak-wood firkins, thoroughly prepared after the manner of the Dutch, as stated on page 325. A greater attention to these points would make the butter thus packed worth several cents a pound more when it arrives in the market than it ordinarily is. Indeed, the manner in which it not unfrequently comes to market is a disgrace to those who packed it; and it cannot be that such specimens were ever put up by the hands of a dairy-woman. I have often seen what was bought for butter open so marbled, streaked, and rancid, that it was scarcely fit to use on the wheels of a carriage.

If you adopt the course which I have recommended in regard to skimming, you will have a large quantity of sweet skimmed milk, far better that it would be if allowed to stand thirty-six or forty-eight hours, as is the custom with many. This is too valuable to waste, and it is my opinion that you can use it to far greater profit than to allow it to be fed to swine. There can be no question, I think, that cheese-making should be carried on at the same time with the the making of butter, in small and medium-sized dairies. You have seen, in Chapter XI., that some of the best cheese of Holland is made of sweet skim-milk. the reputation of Parmesan—a skim-milk cheese of Italy, page 266—is world-wide, and it commands a high price and ready sale. The mode of making these varieties has been described in detail in the ninth and eleventh chapters; and you can imitate them, or, perhaps, improve upon them, and thus turn the skim-milk to a very profitable account, if is sweet and good. You will find, if you adopt this system, that your butter will be improved, and that, without any great amount of extra labor, you will make a large quantity of very good cheese, and thus add largely to the profit of your establishment, and to the comfort and prosperity of your family.

But, if you devote all your attention to the making of cheese, whether it is to be sold green, or as soon as ripe, or packed for exportation, I need not say that the same neatness is required as in the making of butter. You will find many suggestions in the preceding pages on the mode of preparation and packing, which I trust will prove to be valuable and applicable to your circumstances. There is a general complaint among the dealers in cheese that it is difficult to get a superior article. This state of things ought not to exist. I hope the time is not far distant when a more general attention will be paid to the details of manufacture, and let me remind you that those who take the first steps in improvement will reap the greatest advantages.

United States and Virginia Central Agricultural Societies United Fair, at Richmond, Va., Oct. 26th, 27th, 28th and 29th, 1858.

Most of our readers, we presume, are aware that the United States Agricultural Society, presided over till the present year by Col. Wilder of Massachusetts, and now by Col. Tiglman of Maryland, two as gentlemanly men and as intelligent advocates of an elightened agriculture as the world can furnish, is not bound by its rules to hold, and does not hold, a fair every year, but only at such

times and places, as seem from time to time desirable. This year it held a fair at Richmond on the days stated above.

Since last year the Virginia State Society has been for reasons unknown to us, divided, and a new Society formed under the name of the Virginia Central. The anniversary of this new society was celebrated in conjunction with the fair of the United States Society at Richmond. Much of course was expected. A young society with all its youthful ardor about it, spirited, one would expect from the very opposition it had incurred, would be likely to show something worth seeing, and then to be accompanied on the field by the Uncle Sam Society, was a thing that does not always happen. Strong expectations were aroused; and as the steamers Jamestown and Roanoke offered very generously to carry from New-York to Richmond and back for the reduced price of fifteen dollars, making an excursion affair of it, we went to see what we should see. And how was it?

The "South" newspaper, printed at Richmond, snarled at the fair, showed great, ugly teeth towards the North, chaffed and growled, like a chained mastiff, and seemed to feel as it would riot in flesh and blood, or anything else but good feeling, if it could only have its way. It vented its special rage upon the worthy Secretary of the U. S. Society, called him major or colonel, and didn't know which, condemned him as a man, that "could by no possibility have connection with any scheme congenial to the traditions of Virginia, or the interests of her people." On Ben Purley Poor, the designation by which that gentleman is known between Boston and Newburyport, not Cambridge as the "South," by a geographical blunder, has it, its viols of wrath were poured out most pitiably. What the Sec. has done we are not certain, but he must have done something, to be sure, to earn such an onslaught. As for the fair, in the eyes of the "South" it was dusty; it was sad; there was nothing of it, and what there was, was a total, unmitigated failure.

The "Richmond Whig," on the other hand saw much that was indicative of progress. The *Inquirer*, and all other papers of that city and region, so far as they fell under our notice were genial, appreciative, disposed to see good where it was to be seen, and to help on in the good cause of agricultural improvement. The "South" only could see nothing but aggression. In its eyes, there was nothing in the fair that was peculiarly southern; it was "national," "exotic," not to be endured. Whichever way it turned its gaze all was "national." O horrible!

While the press, with the exception named, was hospitable, we have good reason for believing that the people were so without exception. One who had not formed a good opinion of Virginia farmers before, unless a morose fellow himself, would have formed such an opinion after sojourning with them through the show week. That the public houses were too full for comfort, was no fault of theirs. Of exhorbitant charges we heard no complaint, and we suppose there was no ground for any. With regard to the show, it was by no means such an unmitigated failure as the "South" newspaper would have its readers believe; and yet it was not all that might be expected from two societies, one national and the other representing a large State. The fair grounds were pleasantly situated, near the city, and were admirably adapted to the object. The department for horses was separated from that for the exhibition of cattle, implements, machinery, &c.

Of Durhams, a splendid exhibition was made by S. C. Ludington, of Greenbrier county, Va. It consisted among others of two 3 year old bulls, one 2 years old and one 14 months, all of very superior excellence, besides many cows

and other fat animals. Dugalma, one of his 3 year olds, has taken fourteen premiums, and has never been beaten but once. Mr. Ludington's cows were uncommonly fine. His stock took most of the premiums offered for this class. Among his fat cattle was a cow, the fattest we have seen. She is said to be the fattest of anything of the kind in the whole country, though perhaps no one knows this.

Of Devons, Capt. Stansbury, of Maryland, made a remarkably fine exhibition. His bulls, cows and heifers, and indeed his whole herd, which was large, attracted much attention and admiration. Capt Stansbury has been breeding with reference to the milking property, and has succeeded well. We heard it said by more than one that in his State, Maryland, the Devons are fast taking the precedence of all other races. Mr. Ludington, we forgot to say in its proper place, exhibited several grade animals of marked excellence, and among them a very beautiful pair of fat cattle, five years old and weighing nearly 6000 lbs., or 3000 each. We judge that they were a cross of the Durham with the old red cattle of the country. In color they were a deep bright red, and in form we should risk little in saying they were equal to anything that ever stood out doors. It is certainly an encouraging fact that the fine imported cattle are diffusing their blood so generally into the stock of the country. One of Capt. Stansbury's cows, Matilda, was adorned by the ladies with a chaplet of flowers on being led from the ground.

Wm. C. Wilson, of Maryland, made what we should call a good exhibition of Jerseys; we mean good for that race, one for which we have no fancy, and can not approve, but for the single purpose of one cow dairies, that is for the use of families keeping but a single cow. Some one remarked—we believe it was a Kentucky farmer—that he should regard Mr. Wilson's animals as "scrubs" worth about $15 each; and we could hardly fail to assent, though several were equal to any we have ever seen of that breed.

Of Herefords, the show was small. A few natives were exhibited, but natives though they were called, it was evident that whatever excellencies they possessed were due in no small degree to the influence of recently imported blood. There is no use in denying the fact, that we in this country were till very recently too negligent of all sound principles of breeding. It is not that the United States *can not*, but that they *have not* produced as fine cattle as England. Had we begun right 80 years ago, we should have equalled England, and probably surpassed her in the good qualities of stock long ago, and there would have been no need to import at enormous prices. But we had let England get ahead of us, and in that case it was good policy for us to take advantage of what she had done, while we had unfortunately been indifferent to the subject, and allowed our stock to run down. The importers for the last twenty-five years certainly have done a good thing for this country. But the time has now come, we believe, when our true policy is to breed from stock already in our country.

Of Sheep there was but a small exhibition, but several fine specimens of Silesians, French Marinos, Spanish Marinos and Long Wools, were shown. The Virginia farmers have not yet found out, as they unquestionably will ere long, that they do not keep one-tenth as many sheep as they ought. When this great truth becomes known and acknowledged, we shall hear less of farms run down and run out; and we reckon that by that time Virginia politicians will not all clamor for free trade, in wool at least.

The exhibition of implements and machinery was creditable. Utterances were given at several stages in the exhibition to high, noble, truthful senti-

ments. Virginians can certainly do well on the stump. Many addresses were made, which it would be worth going far to hear. *The* great address of the occasion was by Hon. Caleb Cushing of Newburyport. The Hon. ex-Secretary said a great many good things about nationality and union, which every right thinking man must approve as true, if not new; but we thought, and we fancied we could read the same thought in the faces of many a Southern man around us, that it would have been quite as well, if the Hon. gentleman while praising the Union, had not misrepresented, slandered and abused that portion of the Union to which he belongs. It looked a little—what could be the intent?—as if, by abusing his own State and a few other small States cramped in between Eastport and Los Angelos, he was desirous, for some reason—in our simplicity we can hardly comprehend what—of getting pretty "well abused" in return. If that was his wish, we can not afford, being a little contrary, to gratify him. His address was certainly good with the exception of half an hour's abuse of the North, where all the good he could see was exceptional, the exceptions being prodigiously small about this time in his own State. But we advise the Hon. son of Jephunna that an Agricultural Fair is not the best place for political Buncombe.

It occurs to us just now that Mr. Cushing was a member of the last Massachusetts Legislature. The farmers of the old Bay State have since honored many of the members of that body by appointing them at their agricultural fairs, on their committees on calves, for a good reason, perhaps.

THE WIRE WORM.

ELATER LINEATUS.

[*From the Prize Essay of H. Y. Hind, Professor of Chemistry at Trinity College, Toronto, C. W.*]

The wire worm is a name frequently given by farmers to the larvæ of numerous species of beetles belonging to the genus elater. Upwards of sixty different species of this destructive insect are known in Britain, and the same number in Massachusetts, and it is probable that they are equally numerous in this country. These larvæ feed upon the roots and the underground stem of wheat, Indian corn, the grasses, and most varieties of cultivated vegetables. They continue in the larvæ state for several years, and where they prevail are excessively injurious to growing crops.

Wire worms have a long, slender, and very tough cylindrical body, composed of twelve segments, with six feet attached to the three segments next the head. The length of the larva of *Elater lineatus* is about an inch, color yellow, head more inclined to brown, skin tough and rigid, legs conical, body smooth, with a few scattered hairs.

The pupa is whitish, with two black spots over the eyes; it is about a quarter of an inch in length. At the extremity of the abdomen are two short spines, terminating the tenth ring of which it consists.

The perfect insect or beetle is one of those popularly called "snapping bugs;" color brown, legs dark yellow, length of body a third of an inch.

Sometimes the wire worm is found in such destructive abundance that it cuts off most crops as fast as they appear two or three inches above the surface. Under such circumstances, starving them out perhaps is the only remedy; a field kept perfectly free from vegetation can afford them no nourishment, and they must either perish or forsake the field in search of food. Crops of white mustard seed are particularly obnoxious to this insect, and have frequently succeeded in eradicating them. It is questionable, however, whether the remedy in this country would not prove as terrible as the disease; every one knows

what a noxious weed the mustard becomes where land is not kept clean.

Liquid ammonia has been tried with most favorable results for the destruction of this insect. Also, steeping wheat seed in urine and then drying it with sulphur, has been strongly recommended, but although the sulphur may and does prevent the wire worm from destroying the young root, yet it can have no effect in protecting the stem which is so frequently cut off. Ammonia, even in a state of great dilution, kills the worm, which brine fails to do. Under all circumstances, the most certain method of conquering the wire worm is to starve it out by frequent plowing, and keeping the land perfectly free.

Sir Joseph Banks suggested the burying of slices of potatoes and turnips strewed over the field as traps to catch the worms. The insectiverous birds are perhaps among the greatest enemies of these ravenous depredators. In Europe they are preyed upon by an ichneumon parasite, also by a small black shining beetle, (*Steropus dadidus*) and several other insects.

The Hon. A. B. Dickenson, in an address delivered before the Cortland County Agricultural Society, 1854, thus facetiously describes his efforts to destroy the wire worm: "Plowing late in the fall will not kill all of them, but most of them. In three years, I think they may all, or nearly all, be destroyed, and it is the only remedy I know of to destroy the most mischievous and ruinous of insects the farmer has to contend with. I have heard it said that five bushels of salt to the acre would destroy them, or 100 bushels of lime. I have tried both, and have sowed 10 bushels of salt to the acre, and they only laughed at my folly; I tried 100 bushels of lime, as recommended, and they fattened on my bounty. I have only proved one remedy for the rascals, and that is to break the sod, and sow it with buckwheat; plow late and as often as possible in the fall, and then sow peas in the spring; with the like plowing next fall, they will not disturb any crop the next season."

EXPERIENCE OF A WESTERN FARMER.

Five years ago I left the State of New-Jersey, where I once possessed a farm of 40 acres, about one half of very rocky soil, and having stones upon the remainder of it about sufficient to build a small tower. Nothing could be raised without manure, and the tall daisy soon increased, and killed out the crops of grass and clover.

The great change from this to land of virgin soil, and free from stone, was to me pleasant and gratifying; but not altogether the philosopher's stone, turning everything into gold, yet the advantages of this Western country for agriculture are exceedingly great.

The short space of time I have been here, has given rapid and amazing changes all around me. A large breadth of country at first was wild and unenclosed, and farmers could keep stock to any amount, provided they could get sufficient to winter them, and this they can generally cut, free of all expense, in abundance.

Since then these waste lands have been fenced in on all sides; frame houses have taken the place of humble log tenements; and a higher degree of civilization and comfort is manifest all around.

One great thing wanted among our farmers is good barns. The grain, immediately after harvest, is hastily put up in stacks, threshed out the first opportunity, and the straw often set fire to, if not wanted for winter fodder. As our lands are becoming older in cultivation, the burning of the straw will be discontinued, as we shall need it all for manure; and even now, all the farmers around me are coming into the same opinion. Rock County has a quality of

land equal, if not superior, to any to be found in any other part of the State.

The four winters previous to the last, were extraordinarily severe, even for this part of the West. A great many fruit trees, including the apple, pear, cherry and plum, were destroyed by the cold, and although some orchards are doing pretty well at present, we shall have to be careful in our selection of our sorts of fruit, and also in the soil and location where we plant.

Winter wheat does not often succeed, by reason of the cold frosts and chilly winds, which destroy it after the snow has disappeared. One great error here is, new comers take too much land; and wages being high, make the expense too much to be profitable. In all agricultural pursuits here, there is a haste and slovliness to which an Eastern farmer has been a stranger, and which will only rectify itself when the country is more densely settled, and land more valuable.

This is a fine State and country for all persevering, thrifty, and industrious tillers of the soil. Most of the land around me has more than doubled in price since my arrival, and investments must before many years yield a full remunerating return. It is an excellent soil for all sorts of roots and berries. Several grape vines I brought from the East, began to produce fruit last summer, and the grape here bids fair to do well. A friend of mine intends to plant a vineyard of considerable extent next spring. The peach, at present, is a failure. We have a yellow plum which grows wild, but by cultivation in the garden, is greatly improved.

Our first snow has fallen this day; the wild ducks are playing in the stream opposite my residence, and wild geese are daily taking their course to almost all points of the compass. Money here is scarce, grain low, and most people grumbling. R. S.

Fulton, Wis., Nov. 11, 1858.

We reckon so; but as they have plenty of food and "frame houses," they will get on pretty well. The price of land, doubling once in five years, will have a cheering influence; and as it seems they are fast learning to preserve the fertilizers, they will soon have money, and will do well enough. We have not much pity for the people of such a country as Rock County, Wis. When among them, a year since, we thought their land would be hard to beat; but what, to our eyes, gave the brightest prospect to their future, was the high value (remarkable for new settlers) which the people seemed to set upon education for their children. Wisconsin and Michigan stretch away far to the North; snow on the 11th of November is not desirable; but if the ideas of education prevailing among the people of those States, and of Northern Illinois and Minnesota are carried out with energy and success, it will do more to put them among the first States of this Union, than all their beautiful lands and rich soil.—Ed.

A SMALL CROP BUT LARGE.

Mr. Theophilus P. Huntington, of Hadley, Mass., has recently harvested 130 bushels of potatoes from three-eights of an acre. The seed planted was two bushels, crop 65 fold, or 65 for one. Two bushels of seed for that piece, corresponds with 5⅓ bushels to the acre, about one-third as much as has been more usually planted. We have long been of the opinion that one seed potato to the hill, sound, ripe, of the size of a hen's egg, was better than more. This would be at the rate of six bushels to the acre, or thereabouts. Others—and good farmers too—think that three such sized potatoes to the hill, making some eighteen bushels to the acre, will produce more. But if they will try our way, half as faithfully as we have, they will agree with us that one in a hill is better than more. If the hills are three

feet each way, and the seed of the size of a hen's egg, or a little larger, the quantity will not vary much from six bushels the acre. Very small tubers are not as likely to be of a perfectly sound, natural, healthy growth, as those of a medium size. Many of them were late set, the untimely setting having been caused by some accident to the plant, perhaps by too late hilling, and therefore were not fully ripened, or if ripened, were ripened out of time, and consequently are not in exactly the normal condition. So uncommonly large potatoes are rather monsters than the natural production of the plant. Other things being equal, the potato would outgrow its liability to disease, whatever may be the cause of its failure, sooner, by planting seed of medium size, than by planting either very small or very large tubers. At least, it seems reasonable so to believe.—Ed.

WATERING CATTLE.

An exchange says;—"Don't force water, or watery food upon your young stock. Let water be where they can get what they want, but it is a pernicious practice to 'wet' their food. It is unnatural. Watery swill is poor food for swine, and not at all economical."

There is undoubtedly some sort of proportion between the food and the drink required by animals, and whatever the rule is, they should not be compelled to transgress it. For instance, if you should mix a pint of meal with a barrel of water for swine, the poor things would be compelled, in order to get food enough to form their tissues, to swallow an amount of water altogether beyond what they would crave. To compel them to swallow such an amount, would be putting the kidneys to an unnatural, and, it might be, an overtask, one which would be positively injurious, though we believe his pigship is endowed with kidneys capable of separating a good deal of water from the solid part of his food.

The moistening of coarse food for horses and horned cattle can hardly be objectionable on the ground stated in the foregoing extracts, as the small quantity of water would hardly affect the amount they would take in the course of the day.—Ed.

SYRUP AND SUGAR MAKING IN TRUMBULL.

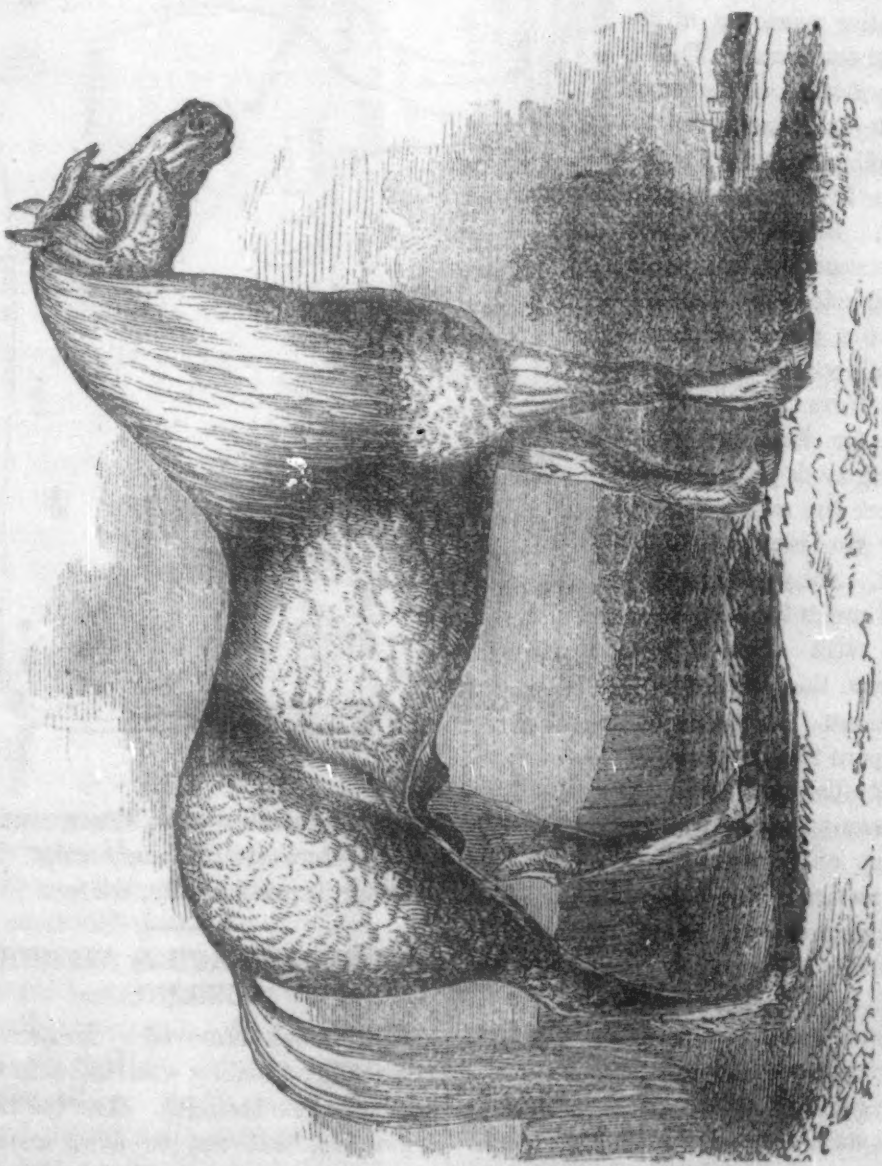
"Having some business, last week, requiring us to visit the northern part of the county, we made it convenient to stop an hour or two in Vernon, with Mr. G. K. Pelton, who is engaged in the business of making Sorghum Syrup. Mr. Pelton employs an iron mill, made by Hedges, Free & Co., Cincinnati. The machinery is placed in a wooden frame, which Mr. Pelton considers preferable, under the circumstances, to an iron frame, as in case of accident to the latter it would be difficult to have it repaired. The juice from the cane, as it is pressed, runs into a strainer which covers a large receiving box, from thence it passes through an iron pipe, and is conveyed to large pans or kettles, two of which are placed over furnaces large enough to accommodate three kettles. In the first kettle it is boiled and skimmed, when it is passed into the finishing kettle. He exhibited fine specimens of the syrup, made without the use of any alkalies or tempering ingredients. He also showed us some sugar he had made from the cane. Its taste was pleasant, but it lacked dryness and clearness. His experience is, that cane is rarely sufficiently ripe to ensure graining."—*Trumbull Dem.*

Some of the experimenters seems to have used large quantities of alkali, and others, among whom is Mr. Pelton, to have used none. That there is in all cases, more or less acidity in the Sorghum juice, we cannot doubt; and therefore some alkaline substances will be found necessary to remove it. Lime is prob-

ably the best. See Dr. Harper's remarks in another part of this number. —Ed.

SWEET CORN FOR WINTER USE.

Cut the corn from the cob; place it upon tins and put in the oven to scald; stir frequently to keep from scorching. After it is thoroughly scalded set it in the sun, or keep it in the oven to dry. When required for the table, put in cold water the desired quantity, and let it boil slowly for about four hours. Replace water lost be evaporation until done.

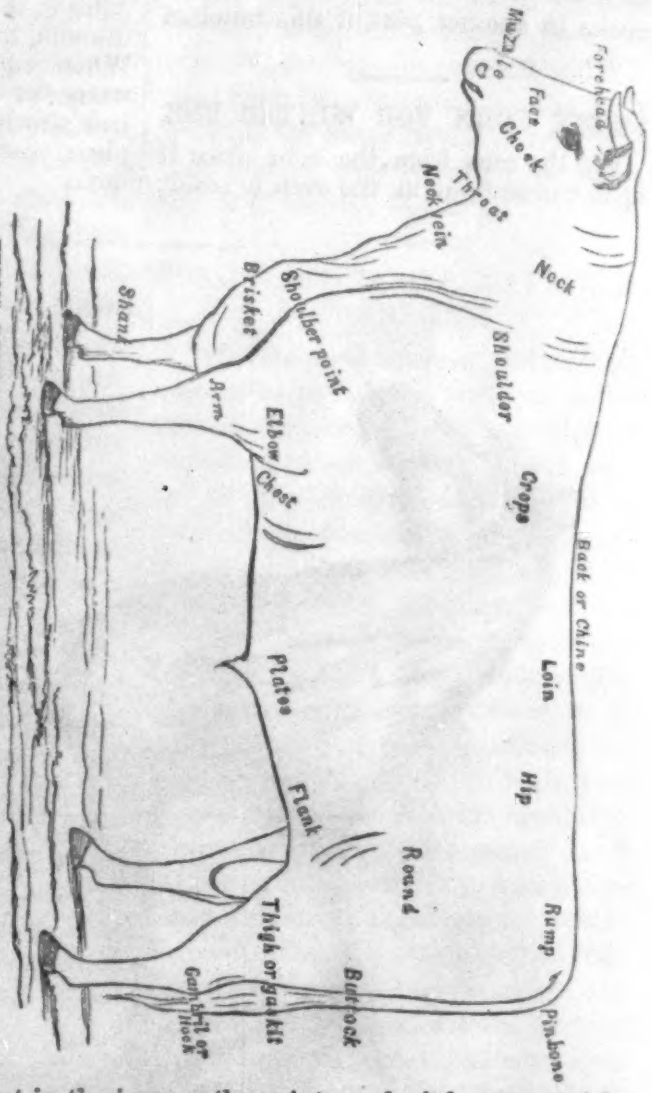


THE FRENCH OR NORMAN HORSE LOUIS PHILIPPE.

The Norman Horse.—The French or Norman horse, from which the Canadian is descended, is destined to take a more prominent place than has hitherto been assigned to it among our working horses. We introduce an engraving of one of this breed, called Louis Philippe, which was bred by Edward Harris, of Moorestown, N. J., by whom the breed was imported from France. So says "The Farm-Yard."

We are glad to learn that means are being taken to introduce the Norman horse more extensively into this country; for, from what we have seen of these horses in France, we cannot but hope for good results from such an experiment.—Ed.

We insert this and the cut of the skeleton horse, on the next page, for the purpose of exhibiting the names of the prominent parts of these animals. It certainly is not necessary that every one should be familiar with the entire anatomy of the ox or of the horse. That is an acquisition of no small difficulty, and none but the accomplished veterinary surgeon is expected to compass it. But it is desirable for every one to know, and to be able to speak familiarly of, the more prominent parts of our domestic animals. Here they are represented for the purpose of bringing each part distinctly before the mind, so as to enable the memory to retain it. All young persons should make themselves familiar with these terms; and even the children may learn them. It would be a good plan for the children to study the skeleton horse of an evening; and then to go out in the morning and point out, and call by the right names the corresponding points of a living horse. What is learned in childhood is easily retained through life.

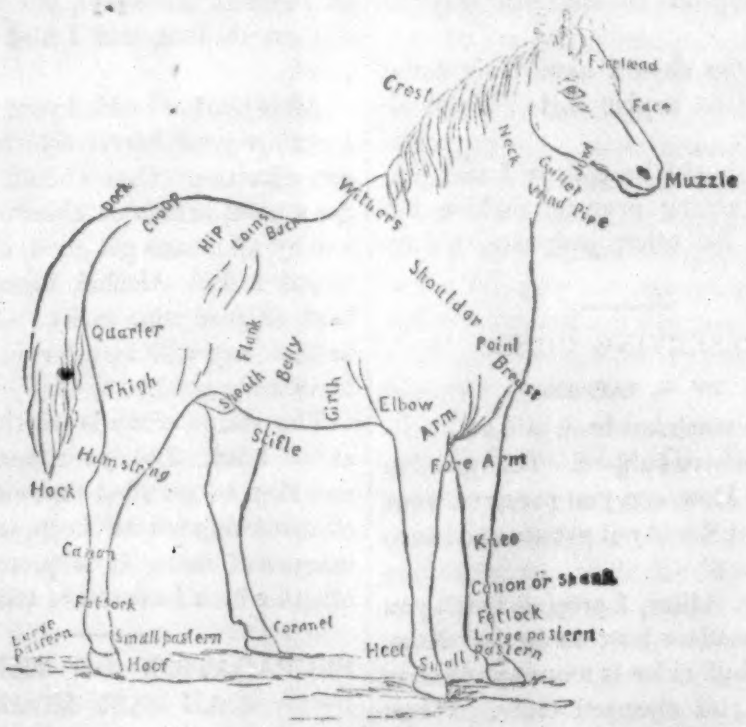


A few lessons, with a little help from some one, would enable them to master the subject perfectly. It is an accomplishment to any one to know all about the horse. Such an animal as that represented in another part of this work, was, in the estimation of Job, among the noblest works of God.

By the way, we owe the children an apology, for not treating them to another of Grandpa's letters to boys. Either we or the printer—don't know certainly which—have lost the manuscript. It is missing, irrrecoverably, we fear.

DRYING PEACHES WITHOUT PEELING.

The *furze* is removed by immersing in lye, made by boiling wood-ashes in water to a tolerable strength. The lye should be warm, but not so as to cook the peaches, which are rubbed in it awhile, and then washed in clear, cold water. Every particle of furze will be removed and only a thin skin remain—they can then be cut and dried in the usual manner. They thus lose nothing of their sweetness by peeling, and are of the best quality for cooking purposes.



Horticultural.

CALENDAR FOR DECEMBER.

FLOWERS.

Cover up and protect tender roses and any other choice flowers and shrubs that require it, with straw. A slight thickness is sufficient.

Take up and put in pots, flowering shrubs for early bloom in the Greenhouse, if not before done. *Persian Lilacs*, *Forsythia*, *Deutzia gracilis*, *Weigelia*, *Roses*, *Azalia pontica*, and many others are well suited to this purpose.

Frames containing plants for the open borders next year, should be opened daily in fair weather, and well protected at night with mats or litter over the glass lights.

Greenhouse plants should also have air admitted daily, whenever the temperature out of doors is above the freezing point; but shut up early in the afternoon, and never allow cold winds to blow in upon the plants.

KITCHEN GARDEN.

Take up and stow away, for winter use, parsnips and all crops, if any still remaining in the ground, according to the locality.

Protect *Spinach*, and any crops planted or sown to come in spring, with straw, or hay spread over, but not too thick.

When cleared from crops, the garden will be much benefited if it is dug over and laid up in ridges, to expose the soil to the full influence of the frost during the winter. Such treatment is equal to half a dressing of manure, if not more.

Currants and *Gooseberries* may be pruned.

Raspberries should have their canes protected, (the tender sorts,) if not already done.

Manure should be collected and prepared by turning over for making hot beds, and for other purposes, as required.

PRESERVING CIDER.

BY W. TAPPAN.

I believe much has been said and written on the above subject. The question is asked, "How can you preserve your cider so that it will not get sour and turn into vinegar?"

Well, Mr. Editor, I propose to tell you and your readers how to do it. Now, you know foul cider is more apt to sour than pure and cleansed cider. When you have got your cider from the mill, in a sweet condition, proceed with it as follows;—Take a large brass or other suitable kettle, and fill it nearly full of cider, put it over the fire, and bring it to a boil only. Previous to bringing to a boil, cleanse it by putting in *one quart* of *sweet milk*. As fast as the milk curdles and brings up the foul matter, skim it off, and continue doing so until your cider is thoroughly cleansed; let it cool down, and now clean your barrel in a most thorough manner for its reception. Fill your barrel, and then add, (the barrel will not be quite full in consequence of the cider boiling or rather cleansing away considerably), two gallons of the best whisky you can procure, (as that article is now conceded to be, on most hands, the purest spirits you can obtain); to each barrel also add a large tea-cupful of native mustard-seed, and five ounces of the essense of winter-green. You can make your winter-green essence cheaply as follows;—One pint of alcohol, 10 cents; half an ounce of the oil of winter-green, 18¾ cents; add together, and you have a large quantity of fine essence.

Some would prefer to add 30 pounds of sugar to the barrel, but this year, I did not do that, and I find my cider is good.

After you have added your ingredients, *bung up* your barrel *tightly*, and put away for use. Care should be taken to get a good article of cider on the start, and by all means get good, clean barrels to put it in. Alcohol barrels are the best, or good wine casks. Cider put up in this way will last for years, and is immensely good.

The recipe alone is worth ten dollars at the least. Let your readers try it, and then be satisfied that cider must be cleansed before it will keep, and the above manner of doing it is preferable to all others which I ever have tried.

PROPAGATION OF THE PEAR—AN EASY MODE.

"Editors Southern Cultivator:—A cheap and easy way of raising pear trees may be an acceptable item to those of your readers who are aware that this prince of fruits assumes its princeliest proportion in this our pearless State of Georgia.

"Whether my method will dwarf the tree or hasten its bearing, remains to be ascertained. The probabilities are that it will. It is, at all events, a policy of insurance to a pear cutting, and will aid, materially, the rapid dissemination of the finer sorts.

"I take any common quince bush; head it back severely; and enrich the soil round it. This will furnish an abundant supply of new shoots fit for budding in June. I then bud this luxuriant quince all over; say a bud to every six inches of each shoot. Some will sprout; others lie dormant. Nearly all will take. During the winter these quince shoots are made into cuttings; each with its pear eye. A strip of land is well prepared and the cuttings inserted in the ordinary mode. Those with dormant eyes split in half and the superior half pushed down flatwise an

inch below the surface. Here they will root like a quince and grow like a pear—exactly.

"The quince under this superior cutting up, will be available again in the spring; so that we may conceive a single bush to furnish, in time, thousands of trees.

"Another fact met me in my experiments in this direction. A branch of quince was layered, having its sprout of Duchesse d'Angouleme. On taking it up on the 10th of January (the layer having been made in August,) the cut in the quince had merely formed callous, while the pear, which was below the surface, at the point of union, had freely emitted roots. By the method just recommended we take both chances, and are very certain of good plants.

"I cannot commend the haw as a stock for the pear. It is too great a favorite with the wooly aphis, from which, so far, our pears are exempt.

"By the way, if my mode of propagating pears is new, 'give it a name, I beg,' as our illustrious old friend, Sairy Gamp, says. What a neat idea, to send a friend a pear stick with a quince privilege! A Golden Beurre (without those dirty roots) to some nice young lady, or a crimson spotted Forelle to

"Yours truly,

"TORCH HILL, Ga., 1858."

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Here is a new mode of propagating pear trees which we present to our readers more for its novelty than with a purpose of recommeding it.

We have some serious objetions to it as exhibited by the writer, but with two or three simple, but important modifications, the suggestion may have no inconsiderable value.

1*st*. The stool or mother plant must be of the Anger variety, as the common quince has not proved adapted to the growth of the pear upon it.

2*d*. The budded shoots must be rooted before separation from the stool by heaping up the earth around them after separating each below the bud; but still allowing it to remain attached. Roots will form at the incision, and at the end of a year the budded plants may be removed. The idea of separating the shoots with only a downcast bud is simply absurd, as even quince cuttings under ordinary circumstances are difficult of rooting, while not one pear cutting in ten thousand will even with care, send out roots.

HOW TO MAKE COLD FRAMES.

GET some planks, and saw to the required lengths; set up on edge and nail well together. Give the bed a south aspect; it should be about one foot in height in front, and two feet at the back. Ordinary glass sash will answer for a covering. In fact we have seen shutters and boards used. Just before winter, bank up all around the frames with earth, manure or litter, and the whole may be covered with mats, brush or with boards. The crop within should have air admitted freely in mild weather. —*The Horticultural Monthly Vol.* 1, *No.* 1.

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ITEMS FROM THE SAME.

The Quince.—Why do not more people plant the quince? They grow well and bear abundantly, yield a good profit, and always sell readily in market. Plant them 10 feet apart, and do not neglect them, and a fair reward will be yours. They want a good, loose, well cultivated soil, with a dry bottom.

—

Tomatoes should always be placed in an open exposure, where they will receive the full benefit of the sun, and it should be the aim of the cultivator to bring this wholesome and popular vegetable to maturity during the hot weather, as it must be obvious to all, that the early produce is less acid, and much richer in flavor than that which comes in later. The size of the fruit may be increased

by cutting off the tops of the vines when in blossom, which always has a tendency to forward it.

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Parsley may be preserved through the whole season, and in every climate, by the following simple process;—pull or cut your parsley when full grown, hang it up to dry, and when wanted for use, rub a little of it betwixt the palms of the hand, put it in the pot, and it will immediately resume its smell, flavor, and color, although it may have been kept for years.

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Peppers.—If it is an object to have this stimulating fruit early, the plants should be forwarded in a hot-bed, and not put out until warm weather. They are valuble for pickling, and the conspicious fruit, forming a beautiful contrast with the leaves, is worthy of cultivation.

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Asparagus.—The stuff sold under this name in the markets is usually but little better than so much tow. Asparagus should not be allowed to grow more than ten inches above the surface of the bed, and should be cut just at the surface, so that the sun and air may dry the stumps and prevent loss by bleeding. The bed should be made deep and rich; it cannot be too deep, and covered in the fall, with six inches of good stable manure, the next spring, spade it.

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Okra.—In the Southern States, this plant is extensively cultivated for the value of its capsules, which, when green, are highly prized in the preparation of soups. With us, though esteemed by many, it is not generally cultivated. Being sensitive to cold, the seed should not be sown too early. About the middle of May, sow in drills; then transplant to the distance of nine inches, in good ground, and they will grow to the height of seven or ten feet, and under some circumstances even higher, producing a handsomely formed leaf and beautiful blossom.

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The best soil for Carnations and Pinks is a large proportion of good rich loam mixed well with some old hot-bed manure and cow dung, with a small portion of drift sand.

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Transplanting — This is the proper season for transplanting all hardy shrubs and trees and plants. The soil should be thoroughly prepared, by being drained, trenched and manured; for want of this attention, many a plantation has lingered in a state of uncertainty 'twixt death and life. With it, the tree grows more freely, arriving at maturity earlier, and will last longer in perfection. These considerations should influence every cultivator, and lead him to carefully and liberally provide for the youthful wants of the tree.

In selecting trees, do not, of all things, select any *because* they are cheap, our word for it and you will growl if you do, and poor nursery-man will be all the safer for being beyond the length of your tongue. Select those which are of healthy, vigorous, and erect growth, having good substantial bark. And then plant none but such as have been properly removed, with good sound roots. Plant as soon as possible, spreading out the roots evenly; carefully cover every one of the fibres with *fine soil*, and settle the earth well about them. Be careful not to plant deeper than they were before removal. Afterwards all that is required to be done is to secure them to neat stakes, else the wind will twist and turn them about and break off the young roots, which often proves fatal to the tree.

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Apply manure to grass lands in autumn, that the fall, winter and spring rains may carry the soluble portions down among the roots. If applied in spring the first tendency is to smother

and check, and the warm weather promotes the escape of the volatile portions of the manure.

[We would sooner spread it in the spring if we could do it at the commencement of one of the long drizzling northeasters, so common to the season.—Ed.]

—

A gentleman of Cuba, Alleghany Co., writes the *Rural New-Yorker*, that he has a stalk of corn now on hand which has *eight ears* on it; the four longest measuring 32½ inches, and the shortest 15 inches, making 47½ inches. It is the King Philip variety, grew very tall, averaging 8 feet high.

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Scarce twenty years ago, no one dreamed of the possibility of planting pear trees and reaping a crop of fruit short of a score of years. Then the tree planted by the father came in full bearing condition only for the son or grandson; had the farmer of the day been told he could plant and eat of the fruit thereof himself, he would have booked his informant as a fit candidate for *lunatico inquirendo*. Of course this discovery, of more value than the results of the most sanguinary battle that ever dyed the face of this fair earth, has created an enormous demand, and it is said that at one nursery alone in this country, the sales have amounted to half a million trees in one year!

As a matter of course a great number of volumes and papers have been devoted to the subject, and sent drifting down the tide of popular desire; few, if any, being so well adapted to the requirements of the many small cultivators of this delicious fruit as the excellent work of Thos. W. Field, recently published by A. O. Moore, 140 Fulton street, N. Y. It is decidedly popular in its place, and thoroughly practicable and comprehensive in its treatment, and will be found of much interest and value to every planter.

The Manual is remarkably free from technical phraseology, and discusses earnestly the subject of soil, selection of trees and varieties, planting, pruning, diseases and insects injurious to the tree, etc., etc.

[So says the *Horticultural Monthly*, and we believe it. Mr. Field has done a great service for all not very advanced in pear culture, and yet desirous of cultivating this delicious fruit.—Ed.]

Miscellaneous.

A RECIPE.

A correspondent in Mississippi writes us; — "There is a delightful pickle made of the Martynia in this neighborhood, and as I have seen nothing of it in print, I send you the modus operandi."

In the north I have seen it cultivated only as a flower, but here it grows almost wild. The seed may be planted in hills three or four feet each way. After they are up leave only one. They require rich, boggy soil. Their pods are gathered when young and tender, with their stem attached, like cucumbers, and put into a strong brine.

When sufficiently salt, they are put into fresh water several times, till the salt is nearly all out. Then put them into a jar and cover with strong vinegar. Let them remain until sour; then take them out, and put them into another jar with spiced vinegar. The vinegar should be flavored some time previously, with cinnamon, cloves, horse radish, onions, and in short anything you like. The first vinegar may be kept for the

next year's operation, by which time it gets strong again. Some add vinegar a third time, and have it heated, but this is not necessary. W. K.

ANTI-TOBACCO TRACTS.

Our friend Geo. Trask of Fitchburg is the greatest war-horse against tobacco. He goes into it with a zeal and energy that ought to insure success, and would were it not directed against one of the filthiest habits of which men can well be guilty. He has printed a series of tracts on this subject, which ought to be read and pondered by every member of the community, and particularly by such as use the filthy and poisonous weed. We most ardently wish these tracts could be universally read, and that the whole tribe of tobacco users could be converted by them from the error of their ways, and particularly the young sinners.—*Maine Temperance Journal.*

And so that journal approves of Mr. Trask's Philipics against the use of Tobacco, rather athwart the interests of our friends, who profit by its cultivation. Well, we suppose that nearly every mother would prefer that her son should not use it. Many a father wishes his sons would not habituate themselves to it. As a general rule, those who use it themselves, are of all others most sensible of its injurious effects, desire more strongly than others, that their children should be kept free from it, wish that they themselves had not become addicted to its use, and yet so inveterate is the habit, that very few ever break away from it. To every sensible and sound thinking man on other subjects, who rejoices in middle life or old age, in having learned the use of tobacco, a thousand, at the very least, are sorry, *sorry*, SORRY, that they ever tasted.

Our argument with the young is this;—If you commence, you do that, which according to the testimony of nearly all who have tried it, will not make you, physically, intellectually, morally, socially, a better man, but a worse; not a happier man in the long run, but less happy; not rising higher in self-respect and in esteem from others, [but falling] lower; with dimished powers of enjoyment, lessened resources for communicating happiness, and clouded hopes of achieving the highest objects of your being. To those who have grown old in the use of what we cannot but regard as a terribly injurious practice, we have now nothing to say, except that we regret their example and its influence.

But to young men, who are yet clean of the habit, or not so saturated, but that they could yet cleanse themselves by a little manly self-denial, we say, and we say it with a certain knowledge of what we are talking about, and with an earnest desire for their welfare, *Why will you commence a habit, or persevere in it, if already commenced, which nearly every man, who has tried it, bitterly has regretted?*

If you were to cut off your fingers for the sake of a pleasurable sensation that would be felt in them when healing, it would be as reasonable as to overcome the awful nausea every one feels from the first use of tobacco, for the sake of a dubious pleasure in its after use, but you would not be a *whole man* afterwards. Some important parts would be wanting. So if you abuse your repellant nature into the love of tobacco, you will not be a *whole man* any more. Its use will certainly fritter away a part of your vitality; it will render your intellectual powers less subject to your control; your moral nature will inevitably suffer in consequence; and who of all your friends will enjoy your society the better for it? Not one. No human being, whose esteem you would regard, will love you the more. You will be less beloved, for there is less of you to love, so sure as you begin and persevere in the use of tobacco. Be clean of it, won't you, young men? A great many young men are taking this journal. We cannot make them a better return than to persuade them to keep clean of tobacco. —ED.

BOOK NOTICES, ETC.

A NEW TRANSLATION OF THE NEW TESTAMENT. By Leicester Ambrose Sawyer. John P. Jewett & Co., publishers, Boston.

It is easy to see by a few hours study of this work—all we have yet been able to give it—that Mr. Sawyer is a scholar and a critic of much more than ordinary abilities; that he possesses, at once, an ardent love of the Scriptures, and a deep reverence for their Divine Author, qualities adapting him to the work he has undertaken; and that very many of the changes he has made from the old translation are a real improvement, bringing he meaning of the sacred writers more nearly into the vernacular of this 19th century, than has been done before.

But whether all of Mr. Sawyer's variations are for the better, or whether he has not introduced more changes than was wise, is more than we know. An old translation, to which the eyes and the ears of the people are familiarized, is to be preferred in all cases, unless the new is decidedly better. We have some fear that this new translation has laid rather too violent hands on the work of King James' translators. That the latter, after the changes of more than 200 years, in the vernacular of the most progressive people on the earth, requires alterations, suiting it to the English of present age, is quite certain. But Mr. Sawyer should know that the American Bible Society exercises a sort of vicegerent power over King James' translation, claiming for it an authority almost equal to that of divine inspiration itself. Absurd as this may seem, it is nevertheless true; and there are not wanting men, at the head of our benevolent institutions, in some of our pulpits, and in a few of our editorial chairs, who will be down upon Mr. Sawyer, as if he had done a very naughty thing; as if he had touched with profane hands the ark itself, instead of only putting a linch-pin into the axle-tree of the cart that bore it; in short, as if he had tinkered with God's revelation, instead of only amending the King's translation of it.

Mr. Sawyer and Mr. Jewett may expect jibes and jeers, ridicule and reproofs, ad-captandum arguments, reasonings ad hominem and reasonings sine cerebro, belchings of pious grief and impious spite, all in abundance, and perhaps anathemas and excommunications. We advise them to take it patiently, not to publish too large editions at first, to make up their minds that they are in a good work, to be willing to be instructed by enemies or friends, with regard to new amendments, or the reconsideration of those already adopted, and if the work does not take at once, it will at least convince all reasonable men that a translation made over 200 years ago, though by kingly authority, is not, and of course could not be, a translation into the English of this day.

Of all who claim that we already have a translation of the Bible into the current English of the times in which we live, one that meets the wants alike of the literary and of the illiterate, communicating the meaning of the sacred writers, and no more, or that we have as good a translation as can now be made for this and coming times;—of all who claim this, and would shut down the gate upon further efforts, some claim what they know is false, and it is nothing more nor less than a pious fraud; while others who make this claim know nothing about it, and so their opinion is worthless.

None but a *Christian scholar*—one skilled in the Hebrew, Greek and Roman languages, at home in the laws, usages, manners, customs and life of those nations, and an adept in English history and literature—can by any possibility form an opinion on this subject, that is entitled to respect; and even with all these qualifications, he must give proof that he is *honest* as well as learned, that

he is incapable of a pious fraud, as well as of all frauds, and that he would not hold King James' translation as a paragon of excellence, unsurpassed and unsurpassable, because forsooth he may think that evils would be incident to the exchange of a worse for a better translation, or his opinion is good for nothing.

It puts us out of all patience to hear men, who may be very good deacons, good business agents, it may be, of a Bible Society, good merchants, farmers, or mechanics, prating about the unsurpassable excellencies of a translation made in an age of bitter controversy, when the world had but just emerged from protracted midnight, and was not in a condition to give a full, faithful, unbiased translation, even to that age, and much less to ours.

Anglo-Saxondom has been cheated with an inadequate, unfair, biased translation long enough. The imperative wants of Christianity demand that we should have a better; and as certainly as that we have a better plow to-day than was had two hundred and fifty years ago, we *shall have it.* If Mr. Sawyer's twenty years' labor is a step towards such a result, we hail it with pleasure. If it is not, we still rejoice in the effort having been made, for it may lead to other and successful efforts; and it will break into the protracted monotony of our being absurdly told that King James' age could make a better translation for this age, than this age can make for itself. We believe that a republican can do as good work in that line as a king, or the servants of a king; that there are men *now-a-days* who understand Hebrew, Greek and Latin as well as King James' payees; and that the English of the 19th century is better understood now than it was two and a half centuries ago; when *let* meant what *hinder* now means, and *earing* meant plowing the ground preparatory to putting in the seed, instead of picking the ears, as we should naturally suppose; since which time many words have faced to a different point of the compass, and not a few, as in the cases cited, have faced to the right about—showing that Mr. Sawyer, or somebody else, with no predilections for king craft in state or primacy in church, and *no pay either from state or church*, should translate the Bible into the English language *as it now is.*

—

Illustrated Annual Register of Rural Affairs, with 144 Engravings. Number Five. Luther Tucker & Son, Albany, N. Y. 1859.

This, like its predecessors, is an excellent little work, of 228 pages, preceded by an Almanac for 1859, the Almanac itself being worth half the money asked for the whole, while these 144 engravings of rural dwellings, races of animals, implements, fruits, ornamental and fruit trees, etc., etc., are worth much more than the whole. Price, 25 cents.

The Horticultural Monthly, Vol. 1, No. 1. Wm. H. Wilcox, editor; James Stillman, proprietor.

A good little thing, hailing from Morrisinia, nicely got up, and worthy of patronage, if its successors are as readable and instructive as Vol. 1, No. 1.

Atlantic Monthly; Boston, Philips and Sampson, Publishers.

Boston cannot produce a racy, spirited, live Daily, that will keep you awake and read you up to the hour, with no abortive attempts at wit. It takes New-York to do that. And the weekly literature of New-York is far superior to that of the so called modern Athens.

In monthlies and quarterlies it is just the reverse. There Boston beats the world, and we suppose would beat the universe, if the other planets were near enough to compare notes. The Atlantic goes ahead of everything of the kind, known to us, terrestrials. That is our opinion. We give it just as it is and for

what it is worth, precisely as willing that others should differ from us, if they will, as we are to differ from them.

COLLEGE JOURNAL OF MEDICAL SCIENCE, conducted by the Faculty of the Eclectic College of Medicine, Cincinnati; monthly, 48 pages, large octavo; $1 a year.

This is a first-rate work of its kind, giving such information as not only physicians, but every family should possess, regarding the laws of life and the preservation of health.

COUNTRY SCHOOL-HOUSES; containing Elevations, Plans and Specifications, with Estimates, Directions to Builders, Suggestions as to School Grounds, Furniture, Apparatus, &c., and a Treatise on School-House Architecture. By James Johonnot, with numerous designs, by S. E. Hewes. New-York, Ivison & Phinney, 321 Broadway; Chicago, S. C. Griggs & Co.

An old farmer, if sensible and kind-hearted, would know how to build a farm-house, suitable for his family, adapted to ease and dispatch in the female labor, and convenient for all farm purposes, better than some sprig from the city who knows nothing of farm-life; as whether the cows give the butter, or only give the milk to make it of; whether the cheeses come ready made from the barn, or have to be made in the house; whether they are to be cured in the wood-house, as the fuel is there dried, or in a room appropriated to that purpose, and so of other farm operations.

So, it is just as evident that a man of sound mind and great experience in teaching, one who knows all the thousand and one little requisites for enabling the teacher to govern well without severity and the children to love their school instead of hating it—knows better than others how a school-house should be built and furnished, in order to make it convenient for the teacher and comfortable for the pupils—a place for the teacher to expend his efforts most advantageously to the children.

Well, here is a book, written by a man, who understands all the ropes and is capable of teaching others. It is well written and beautifully illustrated with instructive engravings. Every committee for building and furnishing a school-house would do well to consult it. So far as we know, it is the only book yet published on this important subject. The information it conveys would enable a committee to build from 50 to 100 dollars cheaper than they otherwise would; and we venture to say far more satisfactorily to themselves and to all concerned.

NEW-YORK LIVE STOCK MARKET.

THERE is at present (Nov. 27,) an over-supply of nearly all kinds of fresh meats. Poultry was never more plenty; and prices are so low, the poor resort to it as a matter of economy.

BEEVES.—5000 were received last week. Most of them passed into second hands, but had not been disposed of by the butchers, when no less than 4,298 came in for this week, a very large portion of which are yet unsold.

Prices as Reported by the TIMES, *Nov.* 23.

	To-day.	Last week.
Premium Cattle.	none	9½c.a9¾c.
First Quality	9c. a9¼c.	9c. a9¼c.
Medium Quality	7¾c.a8c.	8c. a8¼c.
Poor Quality	6¾c.a7c.	7c. a7¼c.
Poorest Quality	4¾c.a6c.	5c. a6¼c.
General selling prices	6¾c.a8c.	7c. a8¼c.
Average of all sales	7.c. a—	7¼c.a7½c.

Cows.—The Cow market is decidedly dull just now. Although the receipts for the past week have not been large, yet the market is overstocked.

CALVES.—The Calf trade scarcely differs from last week. Good Veals sell readily at 6½c., and a few choice ones at 7c.

SHEEP AND LAMBS.—Receipts have been very large, footing up 14,392 for the past week, which is the greatest number since the middle of October.

SWINE.—Receipts continue very large, and prices are rather depressed, with many Hogs on the market unsold.

SINGER'S SEWING MACHINES.

In all the leading branches of manufacturing industry, the great practical superiority of Singer's Sewing Machines is a fact established beyond dispute. No tailor, shoe manufacturer, clothier, seamstress, dress-maker, saddler, carriage trimmer, hat manufacturer, &c., &c., can afford to do without them.

One Thousand Dollars a Year

Is only a fair average of the actual profit from the use of each one of these Machines; and, for confirmation of this truth, we refer to any one of the thousands of persons who use them. They are adapted to every sort of work, fine or coarse, upon silk, cotton, linen and woolen fabrics, also light and heavy leather. They never fail to give entire satisfaction.

To meet the growing demand for a smaller and more elegant machine for private household purposes, we have just produced, and are ready to receive orders for

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Which is the most compact and beautiful Sewing Machine ever constructed. It is ornamented in the highest style of art, and all who see it are delighted with it. It makes the improved interlocked stitch, and is capable of doing a greater variety of work in better style than any other sewing Machine, ever offered for family sewing.

It is not subject to the objection of using twice too much thread and making a raveling seam, like the Grover & Baker; nor is it confined in its operation to a few thin fabrics, liable to get out of order, and unfitted to use flax thread, like the Wheeler & Wilson Machine; but is amply sufficient to perform all kinds of familily sewing.

Price of Family Machine with iron table complete for use, $100. The larger standard machines, from $125 to $200. Send for I. M. Singer & Co.'s Gazette, a beautiful pictorial paper, devoted to Sewing Machines, and containing list of prices, and all other information on the subject. It will be forward gratis.

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FAMILY SEWING MACHINES.

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They make a new and superior stitch, in which the threads are so fastened as to render it *impossible* to rip, even if every third stitch be cut. It makes a more beautiful and durable seam than can be done by hand, while it sews linen, silk or cotton from ordinary spools with equal facility, by a mere change of spools.

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The attention of all those having FRUIT OR ORNAMENTAL Trees is called to this article, for the Protection of Trees from the ravages of Canker and other worms which have become so destructive.

It is *simple*, easily applied to the body of the tree, *durable, and cheap;* and the *only sure remedy against the Canker worm and other insects.*

It is in fact one of those simple, *practical* things, which readily commends itself to the common sense and judgment of every one; and the need of something to save the fruit is known to all. It is now in use in different sections of the country with the most perfect success.

By reference to Harris, Downing, Thomas, and other authors, it will be seen the *Fall and early Winter months* are those for the worms to go up the tree to deposit (each from 60 to 100) their eggs. The Protector applied NOW entirely prevents any Chrysalis being formed another year.

Circular given with description and price, upon application in person or by letter, (postage paid).

From the New-England Farmer: * * * * It cannot fail, we think, to prove effectual. It is simple in its construction and application, and extremely cheap.

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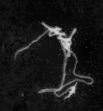
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